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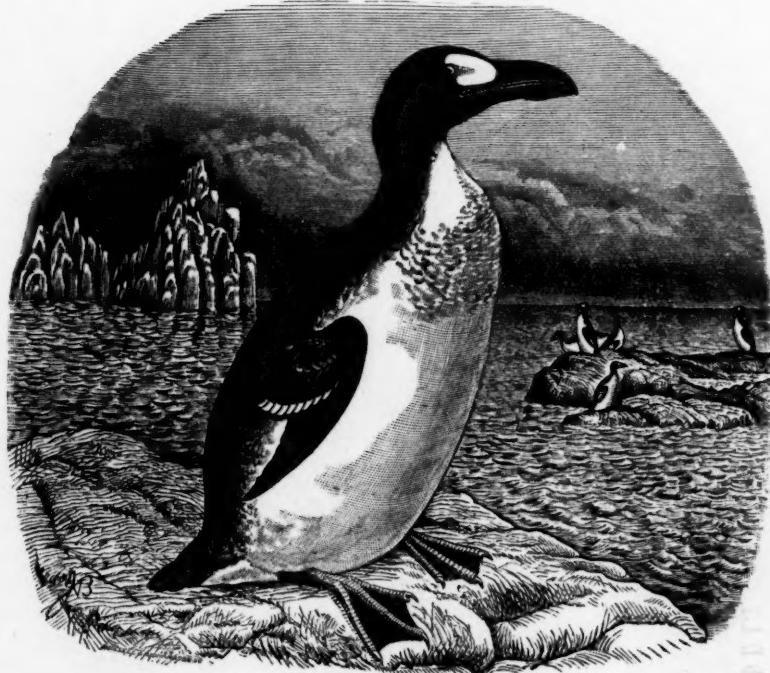
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HECKER, FREDERICK C., Noroton, Conn.	1893

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JESURUN, DR. MORTIMER, Douglas, Wyoming.....	1890
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JOHNSON, FRANK E., Parkville, Kings Co., N. Y.....	1888
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JOHNSON, WM. S., Boonville, N. Y.....	1893
JOHNSTON, DR. A. D., Allegheny City, Pa.....	1891
JONES, LYNDS, College Museum, Oberlin, Ohio.....	1888
JONES, PROF. MARCUS E., Salt Lake City, Utah.....	1890

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JORDAN, Prof. DAVID STARR, Leland Stanford Univ., Palo Alto, Cala.	1885
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KEELER, CHARLES A., Box 2114, San Francisco, Cala.....	1889
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LANGDON, EDWIN, Central National Bank, New York City.....	1891
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PALMER, WM., U. S. Nat. Mus., Washington, D. C.	1888

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PERKINS, CHARLES E., Hartford, Conn.	1888
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RICHARDSON, W. M., Am. Mus. Nat. Hist., New York City.	1891
RICHMOND, CHARLES W., 1908 9th St., N. W., Washington, D. C.	1888
RIDGWAY, JOHN L., U. S. Geol. Surv., Washington, D. C.	1890
RIECKER, ERNST, 900 South 4th St., St. Louis, Mo.	1888
RIKER, C. B., South Orange, N. J.	1885
RIVES, Dr. WILLIAM C., 113 East 38th St., New York City.	1885
ROBBINS, WILLIAM A., 178 Garfield Place, Brooklyn, N. Y.	1888

ROBERTS, GEORGE W., West Chester, Pa.....	1891
ROBERTS, W. F., 1421 G St., N. W., Washington, D. C.....	1888
RODDY, Prof. H. JUSTIN, Millersville, Pa.....	1891
ROOSEVELT, Hon. THEODORE, Oyster Bay, Queens Co., N. Y.....	1888
ROTZELL, Dr. W. E., Narberth, Pa.....	1893
ROWLAND, THOMAS, 182 6th Ave., New York City.....	1890
ROWLEY, JOHN, Jr., Am. Mus. Nat. Hist., New York City.....	1889
RUSSELL, GEORGE C., Meadville, Pa.....	1888
RUSSELL, ROY, Kokomo, Indiana.....	1891
SAGE, HENRY M., Albany, N. Y.....	1885
SARGENT, HARRY B., Niagara Falls, N. Y.....	1892
SCHALER, JOHN, Stamford, Conn.....	1893
SCHLEGEL, Miss MATILDE, East Aurora, N. Y.....	1889
SCHURR, THEODORE A., Pittsfield, Mass.....	1888
SCHWAB, Rev. L. H., 101 Lawrence St., New York City.....	1892
SCOTT, W. L., 74 Sparks St., Ottawa, Ontario.....	1883
SCROGGS, Dr. G. A., Beaver, Pa.....	1891
SHEARER, AMON R., Ames, Iowa.....	1893
SHEPPARD, EDWIN, Acad. Nat. Sci., Philadelphia, Pa.....	1892
SHERRATT, W. J., 263 North 2d St., Philadelphia, Pa.....	1891
SHORES, Dr. E. I., Soldiers' Home, Hampton, Va.....	1883
SHORT, ERNEST H., Chili, N. Y.....	1891
SHRYOCK, WILLIAM A., 823 N. Broad St., Philadelphia, Pa.....	1893
SLADE, JOHN A., 1134 Herkimer St., Brooklyn, N. Y.....	1888
SMALL, FREDERIC L., Provincetown, Mass.....	1891
SMITH, CLARENCE A., 30 W. Bijou St., Colorado Springs, Col.....	1889
SMITH, HORACE G., Jr., 2918 Lafayette St., Denver, Col.....	1888
SMITH, DR. HUGH M., 1248 New Jersey Ave., Washington, D. C.....	1886
SMITH, JAMES E., East Killingly, Conn.....	1889
SMITH, LUTHER H., Box 132, Pittsburgh, Pa.....	1891
SMITH, S. SIDNEY, 59 Wall St., New York City.....	1888
SMYTH, Prof. ELLISON A., Jr., Va. Agr. and Mech. Coll., Blacksburg, Va.....	1892
SORNBORGER, JEWELL D., Cambridge, Mass.....	1888
SOUTHWICK, E. B., Arsenal Bldg., Central Park, New York City.....	1888
SPelman, HENRY MUNSON, 62 Sparks St., Cambridge, Mass.....	1883
SPRAGUE, JOHN C., 38 Wall St., New York City.....	1891
STANTON, Prof. J. Y., Bates College, Lewiston, Me.....	1883
STEERE, Prof. J. B., Univ. of Mich., Ann Arbor, Mich.....	1890
STEPHENS, F., Witch Creek, San Diego Co., Cala.....	1883
STOEY, W. W., Harrisburg, Pa.....	1891
STONE, D. D., Lansing, N. Y.....	1891
STONE, Dr. W. H., Palmer, Mass.....	1893
STONEBURN, FRED. H., Harrisburg, Pa.....	1893
STREATOR, CLARK P., Garrettsville, O.....	1889
STRODE, Dr. W. S., Lewistown, Ill.....	1889
STRONG, REUBEN M., Oberlin, Ohio.....	1889

STUDER, JACOB H., P. O. Box 2417, New York City.....	1888
SURBER, THADDEUS, White Sulphur Springs, West Va.....	1890
SWALLOW, C. W., Willsburgh, Multnomah Co., Oregon.....	1890
SWINBURNE, JOHN, Guernsey, England.....	1887
TALBOT, D. H., Sioux City, Iowa.....	1885
TATLOCK, JOHN, Jr., Mutual Life Ins. Co., New York City.....	1887
TAYLOR, ALEXANDER O'DRISCOLL, 124 Bellevue Ave., Newport, R. I.	1888
TAYLOR, H., 63 Park Place, Bridgeport, Conn.....	1893
TAYLOR, TRUMAN R., 90 William St., Rochester, N. Y.....	1892
TEST, F. C., U. S. Nat. Mus., Washington, D. C.....	1892
THOMPSON, ERNEST E., 86 Howard St., Toronto, Ontario.....	1883
THOMPSON, FRANK J., Zoölogical Garden, Philadelphia, Pa.....	1885
THOMSON, Prof. GEORGE S., Boulder, Colo.....	1892
THORNE, Capt. PLATTE M., 22d Inf. U. S. A., 513 Broadway, Albany, N. Y.....	1885
THURBER, E. CARLETON, Alhambra, Cala.....	1886
TODD, LOUIS M., Calais, Me.....	1887
TODD, W. E. CLYDE, Dept. Agriculture, Washington, D. C.....	1890
TOPPAN, GEORGE L., 138 Jackson St., Chicago, Ill.....	1886
TORREY, BRADFORD, Wellesley Hills, Mass.....	1883
TORTAT, W. R. M., Atchison, Kansas.....	1890
TOWNSEND, CHARLES H., Fish Comm., Washington, D. C.....	1883
TREAT, WILLARD E., East Hartford, Conn.....	1885
TREICHLER, Dr. A. C., Elizabethtown, Pa.....	1891
TROMBLEY, JEROME, Petersburg, Mich.....	1885
TROTTER, Dr. SPENCER, Swarthmore College, Swarthmore, Pa.....	1888
TUTTLE, Dr. CARL, Berlin Heights, O.....	1890
VAN CORTLANDT, Miss ANNE S., Croton-on-Hudson, N. Y.....	1885
VAN DENBURG, JOHN, Los Gatos, Cala.....	1893
VELIE, Dr. J. W., St. Joseph, Mich.....	1886
VERRILL, ALPHAEUS H., New Haven, Conn.....	1888
VILARO, Dr. JUAN, Havana Univ., Havana, Cuba.....	1888
VOORHEES, CLARK G., 59 East 75th St., New York City.....	1888
WAKEFIELD, JULIUS R., Dedham, Mass.....	1885
WALCOTT, ROBERT, 11 Waterhouse St., Cambridge, Mass.....	1893
WALKER, Dr. R. L., Mansfield Valley, Pa.....	1888
WARREN, Dr. B. H., West Chester, Pa.....	1885
WARREN, O. B., Palmer, Mich.....	1892
WEBSTER, FREDERIC S., 114 5th Ave., New York City.....	1886
WEBB, WALTER F., Geneva, N. Y.....	1891
WEST, LEWIS H., Roslyn, Queens Co., N. Y.....	1887
WEST, SAMUEL H., 76 Devoe St., Brooklyn, N. Y.....	1889
WHITE, FRANCIS BEACH, Cambridge, Mass.....	1891
WHITE, HARRY GORDON, 39 Union St., Taunton, Mass.....	1889
WHITE, STEWART E., Grand Rapids, Mich.....	1890
WHITNEY, Prof. E. R., Binghamton, N. Y.....	1891
WHOLEY, W. N., 204 Brady Ave., Baltimore, Md.....	1891

WICKHAM, H. H., Beaver, Pa.....	1890
WICKS, M. L., Jr., Los Angeles, Cala.....	1890
WILLIAMS, J. BICKERTON, 710 Sherbrooke St., Montreal, Can.....	1889
WILLIAMS, ROBERT S., Columbia Falls, Montana.....	1888
WILLIAMS, W. J. B., Holland Patent, N. Y.....	1893
WINTLE, ERNEST D., 11 Hospital St., Montreal, Can.....	1887
WOOD, A. H., Painted Post, N. Y.....	1887
WOOD, Mrs. JOSEPH, West Brookfield, Mass.....	1893
WOODMAN, EDMUND J., Harvard Univ., Cambridge, Mass.....	1890
WOODRUFF, LEWIS B., 14 East 68th St., New York City.....	1886
WOODS, WILLIAM J., State Bank Bld., Richmond, Va.....	1892
WORTHEN, CHARLES K., Warsaw, Ill.....	1891
WORTHINGTON, R. B., Dedham, Mass.....	1893
WORTHINGTON, WILLIS W., Shelter Island, Suffolk Co., N. Y.....	1889
WYE, SAMUEL A., Tacoma, Washington.....	1891
YORKE, Dr. F. HENRY, Hallock, Minn.....	1891
YOUNG, CURTIS CLAY, 63 Greene Ave., Brooklyn, N. Y.....	1891

DECEASED MEMBERS.

ACTIVE MEMBERS.

Date of Death.

BAIRD, SPENCER FULLERTON	Aug. 19, 1887
GOSS, N. S.....	March 10, 1891
HOLDER, JOSEPH B.....	Feb. 28, 1888
JEFFRIES, JOHN AMORY.....	March 26, 1892
WHEATON, JOHN M.....	Jan. 28, 1887

HONORARY MEMBERS.

BURMEISTER, HERMANN.....	May 1, 1892
GURNEY, JOHN HENRY.....	April 20, 1890
KRAUS, FERDINAND.....	Sept. 15, 1890
PARKER, WILLIAM KITCHEN.....	July 3, 1890
PELZELN, AUGUST VON.....	Sept. 2, 1891
SCHLEGEL, HERMANN	Jan. 17, 1884
TACZANOWSKI, LADISLAS.....	Jan. 17, 1890

CORRESPONDING MEMBERS.

BLAKISTON, THOMAS W.....	Oct. 15, 1891
BOGDANOW, MODEST N.....	March 4, 1888
HAAST, JULIUS VON.....	Aug. 15, 1887
HOMEYER, E. F. VON.....	May 31, 1889

MARSCHALL, A. F.....	Oct. 11, 1887
PREJEVALSKI, N. M.....	Oct. 20, 1887
PRYER, HARRY JAMES STOVIN.....	Feb. 17, 1888
SEVERTZOW, N.....	Feb. 8, 1885
STEVENSON, HENRY.....	Aug. 18, 1888

ASSOCIATE MEMBERS.

ADAMS, CHARLES F.....	May 20, 1893
ALLEN, CHARLES SLOVER.....	Oct. 15, 1893
ATKINS, H. A.....	May 19, 1885
BECKHAM, CHARLES WICKLIFFE.....	June 8, 1888
BREESE, WILLIAM L.....	Dec. 7, 1889
CORNING, ERASTUS, JR.....	April 9, 1893
COE, W. W.....	April 26, 1885
ELLIOTT, S. LOWELL.....	Feb. 11, 1889
GOSS, BENJAMIN F.....	July 6, 1893
HOWLAND, JOHN SNOWDON.....	Sept. 19, 1885
KUMLIEN, THURE.....	Aug. 5, 1888
LINDEN, CHARLES.....	Feb. 3, 1888
MABBETT, GIDEON.....	Aug. 15, 1890
MINOT, HENRY DAVIS.....	Nov. 13, 1890
NORTHROP, JOHN I.....	June 26, 1891
PARK, AUSTIN F.....	Sept 22, 1893
RICHARDSON, JENNESS.....	June 24, 1893
SMALL, EDGAR A.....	April 24, 1884
VENNOR, H. G.	June 8, 1884
WILLARD, SAMUEL WELLS.....	May 24, 1887
WOOD, WILLIAM.....	Aug. 9, 1885



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NO. I.

HYBRID *PINICOLA ENUCLEATOR* + *CARPODACUS PURPUREUS*.

BY ERNEST E. THOMPSON.

Plate I.

THE EARLY part of 1890 is remembered at Toronto as the great Grosbeak season. During January, February and March, Pine and Evening Grosbeaks appeared in such numbers as were never before seen. On 22d January a small red Grosbeak was taken from a flock of Pine Grosbeaks by Mr. William Cross, and was brought to me for identification. Its general appearance recalled *Carpodacus cassini*, but having no specimen of this for comparison, I sent the bird to Dr. J. A. Allen, who pronounced it "clearly a hybrid between the common Purple Finch and the Pine Grosbeak." The specimen was subsequently seen by Mr. Robert Ridgway and M. A. Suchetet, the French student of avian hybrids, and all concur in pronouncing it a most interesting and undoubted hybrid between the species named.

The only question raised by M. Suchetet is—was it born in a state of nature? For on that the chief interest would turn. To this I reply, the deep red tints that are found on the Pine Gros-

beak, the Purple Finch, the Crossbills and the European Linnet, are invariably lost in cage birds, and are permanently succeeded by a dull yellow or bronze tint. The specimen in question has all the deep and rich red tints of the brightest plumaged Pine Grosbeak. In addition to this the great difficulty of getting these birds to breed in confinement must be remembered, while the excellent condition of this specimen shows that it was accustomed to liberty. The absence of traces of cage-life and the fact that it was with the wild birds that came down from the north seem to indicate with almost certainty that it was a wild born bird.

I published a description of the specimen in the 'Transactions' of the Canadian Institute (Proc. Orn. Subsection Can. Inst. for Jan'y, Feb'y, March, 1890, pub. Toronto, Oct. 1890), but it was very brief and contains several printers' errors, as well as the blunder of removing my name from the article and substituting that of the collector. The following is a fuller description:

No. 1225 (Collection of Ernest E. Thompson): adult male, length, 6.75 inches; wing, 3.75; tail, 3.125; tarsus, .78; middle toe and claw, .78; beak, .50; depth of culmen, .43; width of gape, .375. In form, as in size, it is intermediate between the two supposed progenitors. The bill is as large as that of some *Pinicola*, and is swollen as in this genus, but it is without the hook. The wing is pointed, the second primary is longest, the order being 2, 3, 1, 4; the secondaries fall short of the point by .94 inch; the forking of the tail is .34 deep.

In general style of coloration it resembles a very highly colored *Pinicola*; no *Carpodacus purpureus* that I have compared it with at all approaches it in richness.

The head and neck are glossy crimson, deeper in certain lights, always deepest on the crown, and slightly tinged with yellow on the sides of the neck. The lores, chin and antorse ruff are light brownish gray. All the feathers of the crown have dark centers, which, however, are concealed; on the cervix they show somewhat, and on the nape they give a slightly spotted or streaked appearance. All of this may be matched exactly in specimens of *Pinicola*.

The scapulars and interscapulars have dark brown centers and light brown edges, with a general cast of yellowish brown

except on the middle of the back and the middle of the scapulars, where a deep tinge of crimson suffuses all and overpowers the yellow. This may be exactly matched in *Carpodacus*, but I believe not in *Pinicola*.

The rump is of a deep clear rose color, exactly as in *Pinicola*. The upper tail-coverts are brownish ash with lighter edge, and a large spot of crimson or deep red on the inner vane of each. This also is as in *Pinicola*, but with the ashy gray of that species replaced by brownish gray, a replacement that is observed throughout.

The throat is of the clear rosy crimson of *Pinicola*, but on the breast it becomes tinged somewhat with the duller purple of the *Carpodacus*, and each feather shows a dark brown central line. The sides of the breast, the flanks and the body under the wings show the warm grayish brown of true *Carpodacus*, and have also the darker center of the latter. The belly is pure white and the crissum white with a rosy tinge, as in *Carpodacus*, but the under tail-coverts have dark central lines as in *Pinicola*.

The wing feathers are of a deep fuscous brown, each feather with a lighter edge, and the whole suffused with red, as in *Carpodacus*, but the three upper tertials are broadly edged with white, exactly as in *Pinicola*. The pale reddish margin of the median and greater coverts are exactly intermediate.

The tail feathers are blackish brown with pale red suffused edges, and may be exactly matched by examples of either species.

The color of the beak is intermediate, being of a deep brown horn color, darkest on the culmen, and palest at the base below. The color of the feet is deep brown, exactly intermediate.

Briefly, then, this specimen presents the rich, rosy and crimson tints and the white wing markings of the adult male *Pinicola enucleator*, but everywhere replaces the ashy tints of this species with the warm brown of *Carpodacus purpureus*. It has also the whole of the abdominal region white as in the latter, but in all other particulars of size, form and color, it is exactly intermediate.

THE LABRADOR DUCK — ANOTHER SPECIMEN,
WITH ADDITIONAL DATA RESPECTING
EXTANT SPECIMENS.¹

BY WILLIAM DUTCHER.

MR. ERNEST D. WINTLE, of Montreal, Canada, a member of the Union, reports a heretofore unrecorded specimen of the Labrador Duck in the Museum of the Natural History Society of Montreal. It is a male in immature plumage, and was evidently mounted from a dried skin; it bears no date or record as to whence it was obtained. He has searched through the Journals of the Society from the beginning to date and cannot find any mention of the specimen therein, and no person connected with the Society seems to know anything about it.

This is the third specimen discovered since the publication of my 'Revised List,'² and makes the known specimens in America twenty-nine, and the total number extant forty-one.

A less pleasant duty than the recording of a newly discovered specimen of this extinct species now devolves upon me. I would gladly escape the responsibility, but justice to the ornithologists whom I quoted in my former paper, and also to myself, compels the following remarks. Prof. Alfred Newton, in his 'Dictionary of Birds,' pp. 221-223, makes the following statement under the subject 'Extermination.'

"Far less commonly known, but apparently quite as certain, is the doom of a large Duck which until 1842 or thereabouts was commonly found in summer about the mouth of the St. Lawrence and the coast of Labrador, migrating in winter to the shores of Nova Scotia, New Brunswick, New England, and perhaps further southward. There is no proof, according to the best-informed American ornithologists, of a single example being met with for many years past in any of the markets of the United States, where formerly it was not at all uncommon at the proper

¹ Read at the Eleventh Congress of the American Ornithologists' Union, held at Cambridge, Mass., Nov. 20-23, 1893.

² The Auk, Vol. VIII, pp. 201-216, April, 1891.

season, and the last known to the present writer to have lived was killed by Col. Wedderburn in Halifax harbour in the autumn of 1852.¹ This bird, the *Anas labradoria* of the older ornithologists, was nearly allied to the Eider Duck, and like that species used to breed on rocky islets, where it was safe from the depredations of foxes and other carnivorous quadrupeds. This safety was, however, unavailing when man began yearly to visit its breeding-haunts, and, not content in plundering its nests, mercilessly to shoot the birds. Most of such islets are, of course, easily ransacked and depopulated. Having no asylum to turn to, for the shores of the mainland were infested by the four-footed enemies just mentioned, and (unlike some of its congeners) it had not a high northern range, its fate is easily understood."

My remarks may be divided into two heads: first, proof as to the date when the last living specimen was shot, and, second, the cause of the extinction of the species.

Date of capture of the last living specimen.—Professor Newton claims that "the last known to him to have lived was killed in Halifax harbour in the autumn of 1852," and in his foot note he refers to three specimens recorded in my 'Revised List' as "supposed to have been obtained between 1857 and 1861; but the information of the former owner of two of them points to an earlier time, and that respecting the third is somewhat vague. Still more uncertain are the rumours . . . of examples said to have been obtained in 1871 and 1878, but since lost. If they could be recovered a mistake would probably be found to have been made."

¹"It is needless to observe that no one at that time had any notion of its approaching extinction. The skin of this example is in Canon Tristram's collection, its sternum, which was figured by Rowley (Orn. Miscell. pp. 205-223), is in the Cambridge Museum. Mr. Dutcher (Auk, 1891, pp. 208, 211), reports three specimens supposed to have been obtained between 1857 and 1861; but the information of the former owner of two of them points to an earlier time, and that respecting the third is somewhat vague. Still more uncertain are the rumours, though properly printed by him (pp. 214, 215), of examples said to have been obtained in 1871 and 1878, but since lost. If they could be recovered, a mistake would probably be found to have been made. Modern American authors profess their inability to explain the extirpation of this species. I have little doubt that the cause mentioned in the text and published by me in 1875 is the true one. The shooting down of nesting-birds, witnessed by Audubon when he was among the islands of the Labrador coast, and year by year carried on with increasing intensity, could produce no other result."

The specimens referred to above are as follows: The Cory specimens, formerly the Boardman specimens, 1857 to 1860; the Brewster specimen, 1857; the Herrick specimen, 1871; and the Gregg specimen, 1878. This last specimen I make no claim for now, nor did I in my list. My statement there was "*specimens recorded, since lost.*" If the Gregg specimen had not been before recorded in a scientific journal of acknowledged good standing¹ I should not have included it in my list on the evidence furnished.

Regarding the Herrick specimen, however, no such doubt can possibly exist and the record can but stand, although the specimen was unfortunately lost. My previous quotations from Mr. Cheney, who shot the duck on the Island of Grand Manan, from Mr. Herrick, who received the skin from Mr. Cheney, and from Mr. Boardman, into whose possession it finally passed, were necessarily brief. Since then, however, I have had further correspondence and interviews about this specimen, the chief points of which I submit herewith. Mr. Cheney could furnish no further information regarding the specimen, but very kindly presented me with an autograph letter written to him by the late Prof. Spencer F. Baird, from which I quote as follows: "Wood's Holl, Mass., June 22, 1871. My Dear Mr. Cheney: Mr. Boardman has just informed me that you have sent him a female of the Pied Duck, which he would forward to us if we wanted it. As we do not possess a specimen in the Smithsonian Museum, I very promptly informed him that the specimen would be very acceptable."

Mr. Herrick verifies the date (1871) by the following statement: "In May, 1871, I was collecting about Grand Manan Island and stopped at the house of Simeon F. Cheney, a fisherman and gunner with an excellent knowledge of local birds. I obtained from him some skins, among them this duck which he had shot a few weeks before. It was the only one he had ever seen. Although I had at the time a very fair knowledge of our ducks, it was new to me. In returning home I left my traps at Eastport, Maine, and went to Calais, to visit Mr. Geo. A. Boardman. He was much interested in this duck and so anxious to obtain it that

¹ American Naturalist, Vol. XIII, p. 128, February, 1879.

on my return to Eastport I sent it to him. He at once wrote to me that it was a female Labrador Duck and that he had sent it to John Wallace, of New York, to be mounted for the Smithsonian."

The above facts seem to me to be conclusive as to the date; now as to the identification. No ornithologist who is acquainted with Mr. Boardman can doubt for a moment his ability to identify any specimen of the American Anatidæ, especially so exceptional a species as *Camptolaimus labradorius*, and further, at the time, he had in his collection a specimen of the female Labrador Duck with which to compare it. Under such circumstances the veriest tyro could make a positive identification. That so careful a naturalist as Professor Baird had no doubt on the subject his letter quoted above would seem to indicate, and our ex-President, Mr. Elliot, tells me that he considers Mr. Boardman as able to identify a Labrador Duck as any one of us, and that he would accept what he said of the 1871 specimen without question. To still further fortify the good standing of this specimen I quote from Mr. Boardman, who says, "I am positive about it; I had my own pair and would have known the bird as soon as I would a Crow."

Regarding the Brewster specimen (1857): While I have no further evidence to offer as to the date, yet it seems unreasonable to doubt the correctness of the label, which was probably written at a time when there would be no object to be gained by falsifying it. One of its previous owners, William P. Turnbull, LL. D.,¹ evidently knew that it was rare, even in 1857, for in his 'Birds of East Pennsylvania and New Jersey,' published in 1869, he so states.

Regarding the Cory-Boardman specimen: No additional light can at present be thrown on the male bird, but I have fortunately been able to trace out the history of the female specimen by the aid of Mr. Boardman and Mr. N. Vickary, of Lynn, Mass. Shortly after the 'Revised List' appeared Mr. Vickary wrote to Mr. Boardman asking whether he, Mr. Boardman, had not purchased from him, in the early sixties, a specimen of the female Labrador Duck, and related the circumstances. Subsequently I obtained from Mr. Vickary the following information which fixes beyond doubt the date of the capture. "In 1862, I

¹ In my 'Revised List' the name is incorrectly printed "Trumbull" instead of "Turnbull."

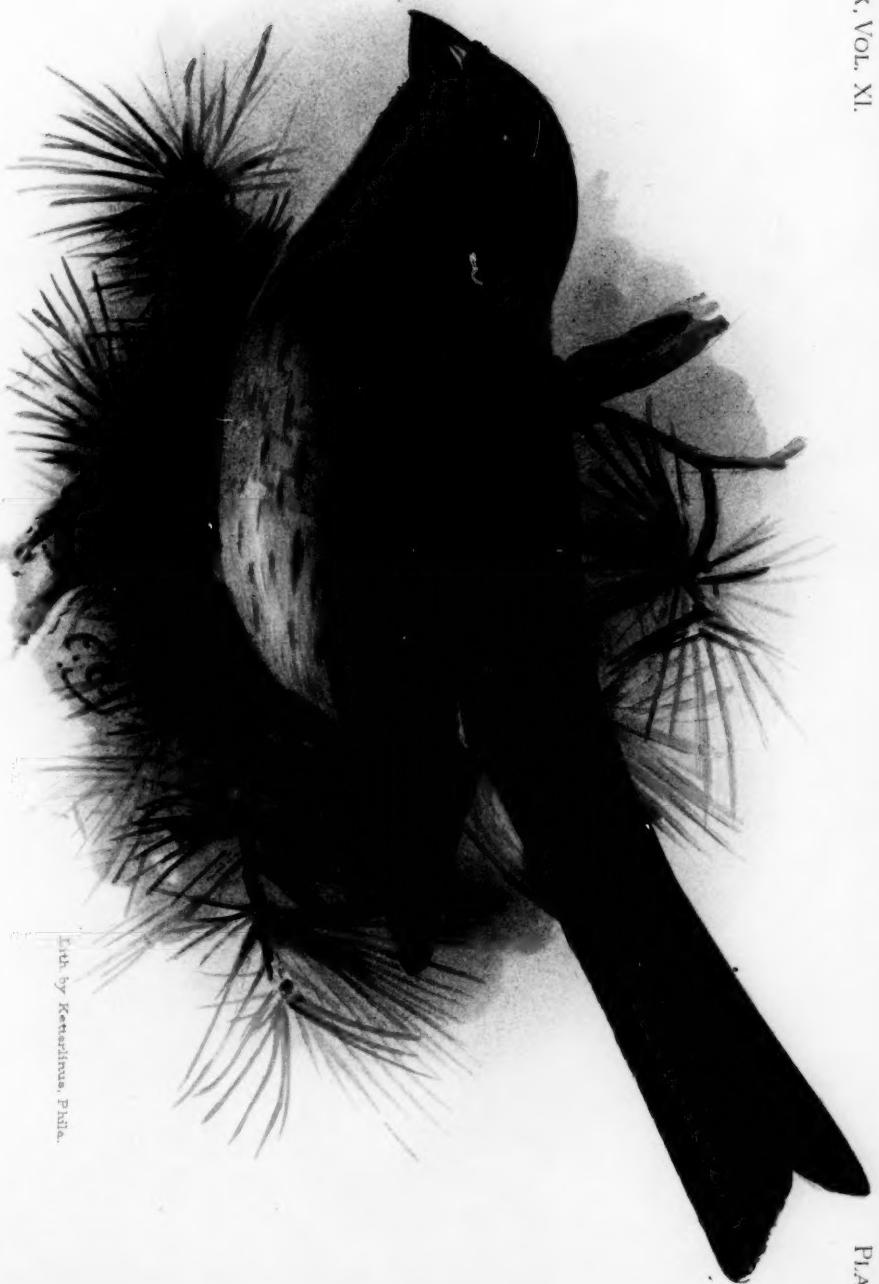
took a trip to Labrador and on my return, one of the party, Mr. Arthur Thomas, of Boston, was boarding at Swampscott and while there shot this female duck in September. We returned the first of that month, so it must have been about the first week in September, 1862. When he brought the bird in I did not think enough of it to stuff it, so it lay several days on my floor; however, I did stuff it, and Mr. Boardman called to see me and bought it. I never had another specimen except the one referred to." Mr. Vickary has within a few hours seen the specimen in question in the collection of Mr. Chas. B. Cory and positively states it to be the bird shot at Swampscott in September, 1862, and sold by him to Mr. Boardman.

Professor Newton in quoting from my 'Revised List' either overlooked certain other specimens of a later date than 1852, or else selected those that he considered the most doubtful. Those omitted are as follows¹: The Lawrence specimen in the American Museum of Natural History, 1865 (p. 205); the Elliot specimen in the same institution (p. 205); the Bell specimen in the Smithsonian Institution, 1875 (p. 210); and the Pike record, 1858 (p. 216).

Mr. Lawrence says of the specimen formerly owned by him: "You can rely upon what I say about it. The date is correct."

Mr. Elliot says of the specimens formerly in his collection, now owned by the American Museum: "If Professor Newton says that the last Labrador Duck ever taken was killed in 1852, he is certainly mistaken. I had several in the flesh at various times during the ten years between 1852 and 1862, mostly females and immature males, and J. G. Bell had others, all obtained in the old Washington Market. The female and young male in the Museum were obtained in the flesh and prepared by Bell. I saw them before they were skinned. Also the full plumaged male in the Museum was procured from John Akhurst of Brooklyn; it was shot on Long Island, received by him in the flesh, and *I saw it*. He made a skin of it for me. I never procured any Labrador Ducks as early as 1852, all having been received several years after that date — I should say between 1855 and 1863."

¹ In this connection see 'Ornithological Miscellany' by Geo. Dawson Rowley, M. A., etc., Part VI, Jan., 1877, pp. 212, 219, 220, in which he quotes certain American ornithologists, and gives dates later than 1852.



Engraved by Kettelerius, Phila.

HYBRID, CARPODACUS + PINICOLA.



Mr. Bell's specimen in the Smithsonian was purchased for that institution by Mr. Lawrence. He says of it: "I remember perfectly the Labrador Duck, male juv., bought from J. G. Bell for the Smithsonian in the fall of 1879; I think Bell's note on the label, 'Fall of 1875,' must be accepted as the time of its capture. This case is unimpeachable and changes Professor Newton's date materially."

The Pike record¹ is as follows: "In 1858 one solitary male came to my battery in Great South Bay, Long Island, near Quogue, and settled among my stools." Col. Pike is a sportsman with a scientific knowledge of birds and was the donor of the specimen of the Labrador Duck now in the Museum of the Long Island Historical Society,² and also of the major portion of their whole collection. It will be noted that Col. Pike states that the bird lit among his stools, and he therefore had an opportunity for positive identification. As he was fully acquainted with the species there can be no reasonable doubt of its correctness.

The records above given extend without any possible doubt the date of the latest capture of a specimen of the Labrador Duck nearly a quarter of a century, *i. e.*, to 1875, and thus brings the species much nearer to the present time than the readers of the 'Dictionary of Birds' would be led to believe.

In this connection Mr. Lawrence suggested to me a very pertinent enquiry regarding the extinction of the species when he was giving me the information about the young male specimen taken on Long Island, N. Y., in the fall of 1875, and now in the Smithsonian Institution. It was, "Where were the parents of the juvenile?" That two old birds were alive somewhere in 1875 is certain and possibly some additional young, as one offspring is a small brood. That many species of birds do not have more than one or two offspring in a season is well known, yet this does not obtain with the Anatidæ, which are usually prolific breeders. It is true that nothing whatever is known of the breeding habits of this species, yet allied species lay as many as five eggs in a clutch.

¹ Auk, Vol. VIII, p. 216.

² Auk, Vol. X, p. 268.

Cause of Extinction.—Professor Newton thinks it was owing to the persecutions of man during the nesting period, and also by reason of its not having a high northern range where it would, presumably, be free from such attacks. There is absolutely nothing known of the exact distribution of the species, nor of its breeding habits. In the literature on *C. labradorius* there is not a single fact relative to the above points given; all that has been written is conjecture. If so, why may we not consider that it did have a high northern range? Our President, Dr. Coues, in his 'Notes on the Ornithology of Labrador,' made in 1860,¹ says: "I was informed that though it was rarely seen in summer, it is not an uncommon bird in Labrador during the fall." This certainly points to a migration to Labrador, in the fall, from some other point further north. Its nearest relatives breed much further north than Labrador, and why not *labradorius*? The only statement we have as to its nesting habits is from Audubon,² whose son was shown nests on the top of the low, tangled, fir bushes which he was informed were those of the Pied Duck. If this is a fact, this species was free from the depredations of foxes and other carnivorous animals, and man only could cause its disappearance. The appearance of this species, and what little we know of its habits,³ tell us that it must have been a strong, swift flyer and thus able to protect itself from man after it had obtained maturity. We can speculate as to the cause of its disappearance, but we have no facts to warrant a conclusion.

Since the publication of my 'Revised List' (1891), two northern exploring expeditions have been made, and with both of them I sent copies of the plates of the Labrador Duck which appeared with the 'List.' The route of the expedition under the auspices of Bowdoin College was along the northeast shore of Labrador during part of July, August and until September 2, 1891. A party of four left the main body at Hamilton Inlet (Lake Melville), and penetrated the interior some 300 miles from the coast. The main party did not see nor hear anything of the species. On August 9, when some 200 miles up the Grand River, Mr.

¹ Proc. Acad. Nat. Sci. Phila., 1861, p. 239.

² 'The Birds of America,' 8vo. ed., Vol. VI, p. 329 (1843).

³ See 'Revised List,' Auk, Vol. VIII, p. 216.

D. M. Cole and his associate, Mr. Cary, saw a female duck with a brood of young which he was sure was this species. Unfortunately they had no shot-gun with them, as their only one had been lost a few days previously when their canoe was capsized in some rapids, so they could not procure either the old bird or any of the young. The only persons seen during the five weeks and two days the Grand River party were gone were a trapper and his family, six miles up the river, and a party of native Indians on the second day out. From none of these could Mr. Cole get any information of this species of duck. The facts obtained by this expedition, while negative, serve to point to the conclusion that the species has become extinct.

The second expedition was that under the leadership of Lieut. Peary, U. S. N., to Greenland. The ornithologist of the party was our fellow-member, Mr. Langdon Gibson, who has furnished me with the following interesting statement of his enquiries relative to the Labrador Duck, and the results, with which I will conclude.

"The Expedition sailed June 6, 1891, from New York. Friday, June 12, 1891, we reached Sidney, Cape Breton, but made no enquiries, as we saw no one who would be likely to know anything about the species.

"Monday, June 15, while passing through the Straits of Belle Isle, we stopped long enough to catch some codfish; here we were boarded by some French Canadians. I showed each one of them the plates of the Labrador Duck in my possession and they all shook their heads saying, in broken English, that they had never seen such birds.

"Saturday, June 27, we reached the settlement of Godhavn, Disco Island, Greenland. Here careful enquiries were made amongst perhaps a dozen leading hunters of the tribe. They also, through an interpreter (a Dane), said they had never seen the bird. Leaving Disco, we proceeded by slow stages, owing to heavy ice in Melville Bay, to our final camping grounds on McCormick Bay. During the ensuing winter nearly every male Eskimo in the tribe came to visit us, and so, from time to time, I questioned nearly every one of them on this subject, showing each my picture of the duck. On first seeing the picture, with few exceptions, each native exclaimed that they had 'Tark-

kooed emis u-ah,' meaning by this that they had 'seen many.' They gave the duck the name 'Argly' and told me in the spring I could get many, also their eggs, at the head of our own bay. I was disappointed when the spring came to have my Labrador Duck materialize in the form of the Long-tailed Duck, which sure enough was very plentiful at the head of the bay.

"In August, 1892 (the latter part, I believe), on our way home we touched at Godthaab, the largest town in Greenland. Here we were entertained by Herr Anderson, the Danish Inspector of South Greenland, an accomplished naturalist, and at his house I had the pleasure of inspecting one of the finest collections of Arctic birds I have ever seen. I showed him my little pamphlet on the Labrador Duck, and also presented it to him on my departure. He told me that his collection represented twenty years' work, and all the hunters in South Greenland (some 500 men) had instructions to bring to him any strange birds that they might get. In this way he has added to his collection from time to time many rare birds and eggs. In all this time he claims to have heard nothing of the Labrador Duck, which I consider is substantial proof that within the last twenty years the Labrador Duck has not visited Greenland. From Godthaab we came directly home to Philadelphia, and this ended my ineffectual attempts at learning something more definite regarding this species."

REMARKS ON THE ORIGIN OF BIRD MIGRATION.¹

BY FRANK M. CHAPMAN.

AS A TEXT for the remarks I have to offer on this subject I have taken the following paragraph from Dr. Allen's paper on the 'Origin of the Instinct of Migration in Birds'²: "Nothing

¹ Read at the Eleventh Congress of the American Ornithologists' Union, held in Cambridge, Mass., Nov. 20-23, 1893.

² Bull. N. O. C., V, 1880, pp. 151-154.

is doubtless more thoroughly established than that a warm temperate or sub-tropical climate prevailed down to the close of the Tertiary epoch, nearly to the Northern Pole, and that climate was previously everywhere so far equable that the necessity of migration can hardly be supposed to have existed. With the later refrigeration of the Northern regions, bird life must have been crowded thence towards the tropics and the struggle for life thereby greatly intensified. The less yielding forms may have become extinct; those less sensitive to climatic change would seek to extend the boundaries of their range by a slight removal northward during the milder intervals of summer, only, however, to be forced back again by the recurrence of winter. Such migration must have been at first 'incipient and gradual,' extending and strengthening as the cold wave receded and opened up a wider area within which existence in summer became possible. What was at first a forced migration would become habitual and through the heredity of habit give rise to that wonderful faculty we term the instinct of migration."

This theory gives us, I think, as satisfactory a working hypothesis of the origin of bird migration in North America as we can hope to have. The few words I have to say relate to the influences which may have aided climatic conditions in establishing the habit of migration and which are probably effective in governing it to-day.

Most animals have an instinctive desire for seclusion during the season of reproduction, and when this season approaches will seek some retired part of their range or haunts in which to rear their young. Even our domesticated hens, turkeys, ducks, and pea-fowl, if given freedom, often travel a greater or less distance in search of a place where they may conceal their nests. Many species of tropical sea-birds resort each year to some rocky islet, situated perhaps in the heart of their habitat, where they may nest in safety. This is not migration in the true sense of the word, but nevertheless the object is the same as that which prompts a Plover to migrate to the Arctic regions, and, be it further noted, the movement is just as regular. These sea-birds pass their lives in the tropics, their presence or absence in any part of their range being largely dependent upon the food-supply. But, as in the case of a Warbler which nests in Labrador, they

are all affected at nearly the same time by an impulse which urges them to hasten to a certain place.

This impulse is periodic and is common to all birds. There is a regular nesting season in the tropics, just as there is a regular nesting season in the Arctic regions. It is evident, therefore, that external conditions have not created this impulse, though it is possible that in many instances they may have governed its periodicity. On the contrary, its causes are internal. In the case of the sea-birds, for example, dissection will show an enlargement of the sexual organs and it is this physiological change which warns the birds that the season of reproduction is at hand.

The organs of male birds apparently begin to enlarge before those of the females, and it is not improbable that this may account for the earlier migration of the males of many species. Furthermore, individuals found south of the breeding range of the species during the nesting season are generally barren birds, and their presence may be due to an absence of conditions which would impel them to migrate to the nesting grounds.

Now returning for a moment to the period of glaciation, it is not improbable that the period of reproduction may have been coincident with the return of the warmer part of the year and, in addition to the desire for seclusion and the pressure exerted by the crowded conditions of existence which then prevailed, was potent in inducing birds to seek breeding grounds in the north during the summer.

I do not presume to attempt to trace the varied influences of changing climate which, acting with the factors I have mentioned, have brought about the conditions of the avifauna of to-day, with its resident species and transient visitants, but will speak briefly of the two classes of our strictly migratory birds.

These are, first, those which breed continuously from our southern borders to the northern limit of their range; second, those in which an area of varying extent exists between the southern limit of their breeding range and our southern boundaries.

Examples of the first class are *Tyrannus dominicensis*, *Vireo calidris*, *Dendroica virginiana*, and *Compsothlypis americana*. I believe the presence of these birds to be due to normal

extension of range. Certainly in the case of the first two there can be no doubt that in this way we can account for their occurrence in the United States. In them we have two abundant West Indian species, which, with a number of others, have become established on our southern boundaries. Whether they will gradually increase their northern range, as others have done before them, will of course depend upon the conditions they encounter. The second two present a similar case carried to greater extreme. The Pine-creeping Warbler nests from Cuba to New Brunswick, the Parula Warbler nests from Florida and Texas northward to Canada, and in its various closely related forms is found as far south as Brazil. These, like the two preceding, we may consider normal instances of extension of range.

In our own experience we have seen how readily a species responds to favorable conditions and how quickly it takes possession of territory adjoining its habitat when the conditions are favorable. These conditions I think are, first, absence of competition with species of similar habits; second, an abundance of food. Temperature I consider of importance only as it affects the food-supply.

The Pine Warbler (*Dendroica vigorsii*) illustrates this. Its habits demand pine forests and it is equally at home during the summer from the pines of western Cuba to those of New Brunswick and Manitoba. Its breeding range, therefore, lies between the summer isotherms of 80° and 64° , — excellent evidence that temperature alone is not the factor which determines its distribution, but temperature as it governs environment.

The Warblers which nest in the Canadian Fauna are good examples of our second class of migrants, or those whose breeding range is entirely north of our southern limits. Here we have species many of which winter in Central or South America and, returning in the spring, pass over thousands of miles to reach the region of their birth. I take it for granted that the members of this second class of more northerly migrants became North American at an earlier period than the members of the first class. This I think is proven by a study of the first class, in which we find species even now entering our limits, and also because it would be unheard of for a species to move its entire habitat thousands of miles, as these Canadian birds would have

had to do if we suppose them to have become North American since the advent of the members of the second class. Doubtless they may once have represented the first class and perhaps at that time all our migrants were confined to our southern borders,—this being presumably the condition of things during the period of glaciation,—but as a gradually changing climate advanced the isotherm which bounded the northern limit of their range, and with it the conditions they required, they followed it northward until even the southern limit of their summer home was carried further north than the northern limit had previously been, except where altitude gave them the surroundings needful to their existence.

As an illustration of how a northern habitat might be acquired I will instance the case of our Common Tern (*Sterna hirundo*) on the Atlantic coast. It is only a few years since this species was an abundant breeder along the greater part of the coast, but a demand arose for these birds for millinery purposes and, as the result, they are now restricted during the breeding season to comparatively few localities. On Long Island, for example, this Tern was a common summer resident but those birds which nested on the mainland were easily accessible to hunters and were soon exterminated, until at present few or no Terns nest on Long Island except a colony of about 1000 pairs confined to the small, uninhabited, isolated islet known as Big Gull Island. On the Massachusetts coast, practically the same thing has happened and Terns are now largely restricted to Muskeget Island.

What has occurred on Long Island and in Massachusetts will doubtless take place throughout the larger part of this Tern's American range. It breeds now from the Gulf of Mexico to the Arctic regions, but is the day far distant when the Common Tern will be unknown as a breeding bird in that part of its present summer habitat inhabited by man? Then its breeding range in America will be a boreal one, and just as the Terns of Big Gull and Muskeget Islands return year after year to the home of their birth, so will these northern breeding Terns return to their Arctic home, and have thus established a habitat similar to those of the birds in the second class of migrants I have mentioned.

But we may learn another lesson from these island-nesting birds.

Their case seems to me to be closely parallel to that of the sea-birds previously cited. It is probable that in both cases these colonies owe their origin to the instinct which guides a bird to return to the place of its birth. Those individuals which selected the most favorable breeding ground would rear their young in safety and the young returning would aid in forming a future colony. On the other hand, the progeny of those birds which did not select so safe a home would be less likely to survive.

Of this wonderful 'homing instinct' which plays so important a part in the migration of birds I have no explanation to offer. We know, however, that it exists, not only in birds, but in many other animals. It is this instinct, aided by the 'heredity of habit,' which guides a bird to its nesting ground. The Carrier Pigeon is taught its lines of flight by gradually extending its journeys; a species learns its routes of migration by gradually extending its range.

As for the desertion of the breeding grounds and consequent fall migration, there seems to be no question that it is due mainly to the failure of the food-supply. Nevertheless, many species of birds migrate long before there is apparently any reason for their doing so. Early in July the Snipes and Plovers begin to appear from their nesting grounds in the north. The first of August finds numbers of our land-birds crossing the Gulf of Mexico en route to their southern homes. Now, it has been frequently asked, if failure of the food-supply is the cause of the fall migration, why do these birds leave their breeding grounds at so early a date? In reply I would ask, why should they remain? The object for which they came is accomplished, and unless they are offered some special inducement to stay, why should they not return to the regions in which—and I would emphasize this—many of them pass two-thirds of the year?

The sea-birds I have mentioned desert their barren homes as soon as their young are on the wing. The Arctic-nesting Snipe and Plover hasten from the north to more fruitful feeding grounds further south. In fact, as soon as the cares of the nesting season are over, the summer home seems to possess few attractions. Some birds at once hurry back to their southern resorts, while others wander at will around the country, pausing wherever food is abundant, and do not retreat southward until they are actually forced to do so.

HABITS OF THE DOUBLE-CRESTED CORMORANT
(*PHALACROCORAX DILOPHUS*) IN
RHODE ISLAND.

BY GEORGE H. MACKAY.

I FIRST visited West Island, Seconnet Point, Rhode Island, in April, 1869, and with three exceptions have passed a few days there every spring since. It was while there during April, 1870, that my attention was first attracted to the Cormorants which I often saw flying about (a few every day) and alighting on the water close to the breakers near the island. This frequency did not, however, continue, for after 1872 they ceased visiting the immediate neighborhood of the island and I have not seen one alight there since. I have, however, seen more or less of them in April every year flying past the island as they passed from one place to another. I soon learned something regarding their movements and roosting place, which was on the Cormorant Rocks, located three and a half miles west of Seconnet Point and three quarters of a mile southwest from Sachuest Point on the Newport shore.

Although often intending to visit these rocks for the purpose of securing some of the Cormorants, I have never done so until this year. I have nevertheless watched them on the island with the aid of the large glass and seen them many times come, just before sunset, to roost on the rocks above mentioned. During my shooting experience on the coast I have taken only a very few Cormorants, or Shags as they are commonly called, for the reason that I never went after them, and also because they usually avoid passing within gun shot of a boat. I remember shooting one, a lone bird, off a headland at Swampscott, Mass., many years ago (species not noted), and one on January 29, 1866, and two on February 8, 1866, in South Carolina (known there by the colored people as 'Nigger Geese'). On October 5, 1877, I shot a lone *Phalacrocorax carbo* on Nantucket Island, Mass., and still another of the same kind on April 21, 1889, off West Island, which comprise all I have ever taken.

It was during my recent trip to Seconnet Point, April, 1892, that I determined to visit the Cormorant Rocks, should the weather and sea be sufficiently favorable for making the trip, it requiring a calm sea and off shore wind in order to effect a landing. When other conditions prevail it is a most forbidding and dangerous place to attempt a landing, surrounded as it is with an impassable collar of surging surf and foam, while rising from the centre are the black jagged rocks surrounded by a nearly flat mesa-like apex crowned with a cap of Fusiyama whiteness as it glistens in the sunlight, but *not*, however, composed like it, of immaculate snow, but of *lime*. Such a day as I had wished and waited for was April 19, 1892, and as I rode at anchor in my little boat off the seaward side of West Island (which lies off the extreme point of Seconnet Point) shooting Scoters, the sea was calm, as it had been for the two days previously, and a gentle breeze blowing from the northwest completed the desired requirements. Perceiving a large cat-boat belonging to two Swedish lobster-men coming towards me, I motioned to them to come up in the wind, as I wished to board and speak with them. This they did, and I soon arranged for them and their boat to carry me to the rocks, to remain all day and return to West Island at night. Wishing to go on shore to secure a few things before starting I instructed them to stand off and on near the island and I would wave for them to come for me in their small boat when I was ready to start. We filled away about nine o'clock A. M., and just before ten o'clock, we were off the rocks. Putting my things into the small boat, one of the men rowed me to the rocks near at hand. After waiting awhile for a favorable opportunity to land, for it was breaking all around, in we went through the surf without taking in scarcely any water and landed on the rocks where I remained until sunset.

These low lying black rocks have been in the past, and are still, the resort and roosting place of all the Cormorants living in and around these waters, and as they undoubtedly received their name many years ago from such occupancy it may be interesting to know that on a map dated July 20, 1776, which is in an atlas called the 'American Neptune,' published in London in 1776, and surveyed by Des Barres, that these identical rocks are cor-

rectly shown and located under the name of the 'Cormorant Rocks.' It would not, therefore, seem unreasonable to infer that they were so named on account of being frequented by these birds at that early period, or even before. If such a conclusion is admissible it would show an occupancy of certainly one hundred and sixteen years, and possibly for a longer period, as well known local names are preserved when feasible in order to avoid confusion. There is, however, other evidence of long occupancy of still greater interest to the ornithologists, in the fact that I discovered, on careful examination, that many of the projections of the rock on the mesa top, which afforded good *standing* places, had apparently been worn *smooth* and *glossy* by long use. These resting places sloped down on the sides, affording the birds, when standing on them, convenient places for ejecting their excrement, there being invariably a deeper deposit of lime at their base than on other portions of the mesa top, which was also covered with such deposit to a greater or less degree.

On the flat top of the rock I found and saw a large number of curious *balls* (and brought fourteen away with me) varying from an inch to two inches in diameter and composed almost entirely of fish bones, chiefly the bones of young parrot-fishes (Labroids) and drums (Sciænoids)¹ firmly cemented together with gluten, hard in the dried specimens and soft and gelatinous in those more recent. One of the largest of the former, which was five and a quarter inches in circumference and quite black, while all the others were of a light color, contained three crabs (*Cancer irroratus* Say = *Panopeus sayi* Smith) in a fairly perfect condition, with some of the claws still remaining in place, showing they were probably swallowed whole. I am consequently inclined to the opinion, in the absence of absolute facts, that these birds, like the Owls, have the power of ejecting indigestible substances.

The Cormorant Rocks are of small area, the mesa top being only about thirty or forty feet square (estimated), the greater part of which is covered with a deposit of lime, its depth varying

¹I am indebted to Mr. Samuel Henshaw of the Boston Society of Natural History, and to Mr. Samuel Garman and Mr. Walter Faxon of the Museum of Comparative Zoölogy, Cambridge, for aid in identifying the composition of these balls.

from one-eighth of an inch to two inches. This portion of the rocks is the only part not washed by the waves, except during a severe storm. On it are three or four small pools of a few feet area, of greenish water, being an accumulation of rain water and drainage. Extending several hundred feet towards the southwest, and forming a part of the main rock, is a low black ridge of jagged rocks, over which the sea usually breaks with fury, lashing into foam the surrounding water. The only place where a landing can be effected, and then only in moderate weather, is on the inshore side of the high rock. The mesa top of the rocks seems to be the favorite spot for the birds to rest, although there are two other places lower down, one of which is separated from the main rock, on which I have frequently seen them standing. As may be supposed, on my arrival I found the odor was sufficiently strong to pervade the surroundings; it took, however, but a short time to become accustomed to it, and it caused me little or no inconvenience while I was there.

After a careful survey of my surroundings I selected as favorable a place as I could find for concealment, and sat down to await the coming of the birds. As the Cormorants leave these rocks between daylight and sunrise in quest of food and do not begin to return, except a few scattering birds, until about five o'clock p. m., especially if the weather is moderate and the sea calm, I had little hopes of seeing much of anything meanwhile. Nor was I disappointed, for I saw only six of the Double-crested, and three of the common Cormorants (*P. carbo*) in all, up to half past five p. m. I shot one (*P. carbo*), a lone bird, but in falling in the water close to the rocks the surf drove it into a cleft from which it was impossible to regain it, much to my regret. Of the Double-crested (*P. dilophus*) about a dozen were shot down, only five of which (all males by dissection) were saved, owing to the necessity of having to keep the large boat away at a distance of nearly half a mile, in order that it might not frighten the birds and prevent them from coming to the rock, there being no place where a small boat could be kept out of sight in safety. Therefore those that were shot down were only secured after considerable lapse of time, and only those birds which had been shot dead were recovered.

Although these Cormorants had probably been undisturbed for a long time (I have never heard of any one going after them)

previous to my visit, they were most vigilant, being noticeably careful in looking the rock well over and flying around it before coming within shooting distance. Those birds which were only wounded disgorged soon after striking the water, and I saw a Herring Gull (*Larus argentatus smithsonianus*) pick up and swallow an eel one of them had ejected after being shot down. All the Double-crested Cormorants (*P. dilophus*) obtained had eels (*Anguilla vulgaris* Turton) in their throats. In four of the birds the heads of the eels had been apparently torn off, and they rested in the throat in every instance in the form of a loop or ox bow, the two ends being nearest the stomach. In the fifth and largest bird an eel in perfect condition, measuring sixteen inches long and one inch in diameter, rested lengthwise in the throat with the tail at the mouth. Those taken from the other four birds were seven to ten inches long. It would therefore seem that eels constitute a large part of their food in this locality, at least at this time. I also picked up on the top of the rock an eel in a partially dried condition, minus its head, which was probably seven or eight inches long before the head had been torn off; it was in the form of an ox bow or loop, having dried as it was probably ejected. I am puzzled to know just where or how so many eels could have been obtained so early in the season. It is possible the birds may have discovered some spring hole near the mouth of some creek or river which, being warmer than the surrounding water, gave to the eels a vitality which they otherwise would not have had so early in the season; and the Cormorants having made such discovery, used it to their advantage. If so, I infer the birds must have performed the greater part of their fishing somewhere up the Seconnet River.

When approaching the rock the birds usually fly about and often completely encircle it before alighting. I also noticed that they were very apt to first alight in the water near at hand where they remained for a little while, especially if the weather was moderate, before flying up to roost on the rocks. This I have seen them do repeatedly. At the date of my visit (April 19, 1892) I should estimate the number of Cormorants frequenting these rocks, and which were apparently all Double-crested (*P. dilophus*) at about one hundred and fifty. Between half past five to six p. m. on April 19, 1892, I counted sixty in one flock,

twenty-five in another, eighteen in another, and scattering flocks of seven or eight each, down to a single bird (it is of course possible that I may have seen some birds more than once); and although the greater portion flew near enough for me to see them very plainly, I failed to detect any of the Common Cormorant (*P. carbo*) mingled with them. They seemed to make little disturbance of the air in flying with their slow measured movement of the wings, and it can be truly said that they came and went silently. While on the rocks observing them I failed to hear them utter any sound whatever. Their movement towards the rocks did not reach its height until quarter of 6 p.m. The greater part of the birds came from a northeast direction, and flew close to the water; those coming from the west were always flying higher up (100 to 150 feet), probably coming from a longer distance.

As I have before said, the birds leave the rocks in the morning, about sunrise or a little before, to go in search of food, as I have noticed those which passed West Island, flying towards the east, did so at about that time. My Swedish boatmen informed me that they had seen the Cormorants on the rocks early in March, 1892. While I was watching, a Double-crested Cormorant alighted in front of and near me on the rock. The movement was so light and graceful as to cause me much surprise, as I had heretofore regarded them as clumsy. This bird alighted with the ease of a Robin on a twig, and stood erect with legs straight and neck extended. On April 15, 1892, the first birds alighted on the rocks to roost at 6.02 p.m., and I counted eighteen in sight on the rock through the large glass. On April 16 the first bird alighted at 6.20 p.m., and one minute later there were eight, a flock of seven having come on. On this evening most of them seemed to come from the west, yet I believe that they must have passed around the rock to that side, flying so close to the water that I failed to perceive them as I looked through the large glass, as I believe that most of the birds must procure their living somewhere up the Seconnet River. On April 17 there were seven birds in sight on the rocks at 6.24 p.m. On April 18, at 5.22 p.m., there were about thirty in sight on the rocks, and at 6.15 p.m., there were forty or fifty. The north rock (of small area) was first covered with them;

those coming later located on the mesa top of the main high rock, before going to which I could plainly see them flying about the rock and alighting in the water. The formation of Cormorant Rock is such that it shelves towards the west, and I think there were undoubtedly many more birds there which I could not see, owing to my point of observation (West Island) being to the eastward of the rocks.

When wounded and on the water the neck is carried upright to its fullest extent, with the bill invariably pointed upward at an angle of forty-five degrees, giving the birds a most *snaky* appearance. As they are expert divers and swimmers, it is next to impossible to retrieve them when only wing-broken or wounded. When dead and floating they have less buoyancy than any water bird I ever shot, the head and neck sinking below the surface and apparently dragging down the body by their weight, so that the bird makes but little more show than a dead Old Squaw (*Clangula hyemalis*).

I was naturally curious to know what effect my invasion of their precinct had on these birds; so on the day after my visit to the rocks, and occasionally for several days following during the remainder of my trip, I looked for them through the large glass. At noon, on April 20, there were eighteen birds standing on the highest part of the mesa rock. These I think were probably some which had not come to the rocks during the time I was there, for with this exception they were the only ones I saw *on* the rocks during the remainder of the time (several days) I was at West Island. At sunset, on April 20, the birds were flying about the rock and alighting in the water as usual, the weather still continuing moderate and the sea calm; but none apparently dared to alight on the rocks, at least as long as it was light enough for me to see them through the glass, and considerable distrust had apparently been created as to the rocks being that place of security and rest they had been led by long occupancy to suppose. I, however, sincerely hope and believe that they will be well over their troubles long before next spring, and back to their customary home on the rocks as usual.

When flying south on migration, their manner of flight resembles that of migrating Geese. They first appear on the Massachusetts coast about the middle of August, the height of the

movement being in September, some of the flocks then numbering sixty or more birds. During such migration they are frequently mistaken for Geese or Brant, especially when passing over the land two to three hundred yards high. In very windy and rough weather they have been known to pass over the land very low down, in one instance within ten feet of the ground, but this is very unusual. Mr. Geo. A. Tapley of Revere, Mass., shot one of three (variety not noted) which were standing on the edge of a marsh in that place in the winter, at a time when there was much ice around. They were engaged in eating a sculpin (*Cottus scorpius* Linné, subsp. *grænlandicus*) ; whether caught by one of them or found on the shore was not known ; the belly and entrails had been eaten at the time he disturbed them.

The only other resort of these birds in Massachusetts or Rhode Island, of which I am aware, is on the 'Graves,' some rocks situated outside of Boston Harbor, Mass., a place which has also been a noted resting and roosting place for Cormorants for a great many years. Last year in this locality the flight of Cormorants was apparently large, the birds being more numerous than usual, but for some unknown reason very few remained at this resort. On some days five hundred to one thousand (estimated) birds have been known to pass this place while migrating south. They are very gregarious. The *Common Cormorant* (*P. carbo*), like the *Common Guillemot* or *Murre* (*Uria troile*), is *uncommon* on the Massachusetts and Rhode Island coasts, and is not often taken, as far as I am aware. The Double-crested Cormorant (*P. dilophus*), as I have here shown, is not at all uncommon.

The immature birds of *P. dilophus* are of a general brown tint all over, with a greenish shade on the back and upper tail coverts, the lower parts being light brown. The rounded end of the feathers which cover the entire back when the wings are folded are at this period but imperfectly defined, but in the fully adult bird they are dark drab gray, and contrast boldly and harmoniously with the beautiful dark velvety green of the rest of the adult bird's plumage. The adults of *P. dilophus* seem to vary considerably in size, judging from those I have seen, and the sexes are not distinguishable to the ordinary observer by their general appearance, being apparently alike. The downy young are dark brown all over.

A FURTHER REVIEW OF THE AVIAN FAUNA
OF CHESTER COUNTY, SOUTH CAROLINA.¹

BY LEVERETT M. LOOMIS.

CONCLUDING OBSERVATIONS ON MIGRATIONS.²

THE conclusions reached in this portion of the article, while based on the observations of fourteen years in Chester County, South Carolina, have been tested and corroborated by the facts bearing upon the migration of North American birds found throughout the literature, and by a study of the earlier southward movements at Monterey Bay, California, from the latter part of June to near the end of August, 1892.

I. Variability in the Occurrence of Transient Migrants.

Variability in the occurrence of transient migrants in a given locality may be said to be of two sorts, that which is periodic and that which is erratic.

Periodic Variability.—This is illustrated in such birds as habitually occur more sparingly in this region in the southward migration than in the northward, and *vice versa*: examples, the Bobolink and Yellow Palm Warbler, most abundant in spring, and the Chestnut-sided, Blackburnian, and Palm Warblers, most abundant in autumn. Such seasonal variation in abundance can be explained only in two ways, either the majority pass to one side or else they pass over without stopping. It seems highly improbable that smaller land birds of abundant and extended distribution uniformly pass directly over this locality without being fairly represented in some stage of their movement, for it appears hardly possible that there should be so nice an adjustment of suc-

¹ Concluded from Vol. VIII, pp. 49-59, 167-173, and Vol. IX, pp. 28-39.

² Read in part before the Eleventh Congress of the American Ornithologists' Union held in Cambridge, Mass., Nov. 21-23, 1893.

cessive waves every year as to lead to such a result, particularly in species in the southward migration, like the Canadian Warbler, having a breeding range similar to that of others occurring regularly, as the Black-throated Blue and Blackburnian Warblers. On the other hand, there might easily be a shifting of the line of migration to the eastward or westward. This is exemplified in the Bobolink, which is abundant along the South Carolina coast in autumn, but only so in the interior of the State in spring. Of birds breeding in the mountains to the northward — habitually rare or absent here in the southward migration — the case might be somewhat different, for the first migratory movement might take them to the region below, stragglers only dropping by the way. The failure of northern born representatives of species like the Rose-breasted Grosbeak and Canadian Warbler to appear later, regularly here or in the country below the fall-line in this State and North Carolina, considered in connection with the fact of the habitual occurrence of other species breeding in the mountains, tends, however, to prove that a more westerly route is pursued in such instances, the trend of the mountains probably being followed, only the outskirts of movements reaching the Piedmont Region. In spring, in the northward migration, the Rose-breasted Grosbeak and Canadian Warbler apparently bear further to the eastward bringing this locality more in their path. The abundance of the Blackburnian and Palm Warblers in autumn, like the scarcity of the Bobolink, is also seemingly attributable to deflection to the eastward.

It does not follow because absence or rarity in successive years through the whole course of a migration may be due to shifting of route that waves may not pass directly over a locality without their being manifested through the stopping of the birds. Such a phenomenon in actual occurrence was witnessed by me at Monterey Bay, California, during August, 1892. An extensive movement of Northern Phalaropes took place during the first week of the month. The height of the movement was during the forenoon of the second day, when there was a continual succession of flocks moving rapidly down the coast. They flew but a few feet above the water, following the shore-line of the Bay, rounding Point Pinos, and heading steadily southward.

They kept well away from the land. None were seen nearer than a mile, most were out beyond two miles. At midday, over several square miles, a few solitary individuals were seen on the water. All the others had disappeared, had passed over without stopping. On the 10th a second and apparently greater flight began, reaching its height on the 12th. As before, all flew steadily southward along the line of the shore. They came nearer to the land, however, on the day of greatest abundance, a heavy fog having set in. When it lifted it was seen that the inshore edge of the movement was within five hundred yards of the surf at Point Pinos — a sort of local shifting having transpired. The flocks were quite noisy as they passed onward through the fog. The constant utterance of their call notes not improbably aided those further out to keep their course. No stragglers were noticed on the water during the fog or after it. All had passed over. From the 15th onward there were feeble movements along, but no rushes. The birds were inclined to approach the shore nearer than at first, and loiterers were found quite numerously upon the water. Perhaps these later birds were not the tired ones that had dropped by the way and resumed their journey, nor those that had been delayed in starting, but arrivals from stations further north, the advance guard of others that subsequently followed, as I was informed, and made the Bay a resting place.

On land such a migration as described would readily have escaped notice in its earlier stages. The concealment afforded by the vegetation would cause stragglers to be overlooked, and the greater perils and the artificial and natural obstructions would necessitate a higher flight being maintained.

To summarize: When a smaller land species is habitually rare or absent in this locality through the whole course of either movement, it is held, aside from the influences of environment, that the cause lies in the shifting of the line of flight to the eastward or westward, not in a continual passing over of successive waves.

Erratic Variability. — Lateness of arrival, unusual scarcity or absence, exceptional abundance or occurrence, exemplify erratic variability. These irregularities of migration may reasonably be attributed to variableness in the location of isolated communities, variation, eastward or westward, of starting point bringing about

variation of route, and to meteorological conditions, occasioning deflected, arrested, regurgitated, and involuntary movement.¹

An instance of deflected migration appears to be afforded in the presence of the Bobolink here in unwonted numbers in August, 1887, after a violent gale along the North Carolina coast. Perhaps additional instances are found in the relative abundance in different springs of the Rose-breasted Grosbeak, and also of the Canadian Warbler, and in their casual presence in autumn. The 'tidal wave' mentioned by Drs. Coues and Prentiss in 'Avifauna Columbiana' (pp. 31, 32) seems to have been due to deflection—deflection apparently from the Appalachian Highlands. The height of the 'wave' was doubtless increased by a subsequent arresting of its progress through cold to the northward.

Local deflection occasioned by fog has incidentally been referred to in the Northern Phalaropes at Monterey Bay. A more striking illustration was furnished in two purely pelagic species in the same locality. On the morning of August 4 a heavy bank of fog which had been resting over the ocean beyond the headlands set into the Bay. I was out on the Bay, several miles off Point Pinos, at the time. Soon after the coming of the fog a number of Shearwaters were seen a little further out, flying rapidly seaward. In a short time they were followed by others, singly, in little companies, and in straggling flocks of considerable size. As the fog became denser it was seen that their line of movement was bearing more and more toward the south shore. Their flight was near the surface of the water, and, as there was a heavy swell, when the boat was in the trough, as they suddenly appeared in the fog over the crest of a wave, it seemed almost as if they emerged from the wave itself. When the boat was sighted, if too near, they would diverge from it so as to pass to one side, but without altering

¹ Destruction of bird life by storms, especially during migration over extended bodies of water, has not been enumerated as among the probable causes of erratic variability, for the mortality would have to be very great indeed, far above the average, to be generally appreciable along the avenues of migration. There would have to be wholesale extermination among the legions of a species to produce marked diminution, which could only be followed by continued scarcity during recuperation—an event that has not come within the range of my observation. The disastrous effects of the elements would be more readily perceived on the breeding grounds.

their general course, which was directly out to sea. There was no going and coming from rookery to feeding places as in Brandt's Cormorant. Their flight was all one way, parallel with the coast-line that would lead southward. The specimens taken showed that both the Dark-bodied and Pink-footed were represented, the former predominating. After an hour or two the fog began to break along the south shore, and as it rapidly retreated seaward, the line of movement receded, the birds keeping just without the denser mist.

The arresting of the progress of a movement in a locality would necessarily present the appearance of extraordinary migration — such as is often termed a 'bird wave.' An apparition of this kind has been reported by Mr. Philip Cox (Auk, VI, p. 241). The actual stoppage of a vast army of Robins, Song Sparrows, and Slate-colored Juncos by a snow storm was witnessed by him one morning in April, 1885, near Newcastle, New Brunswick. When occasion for migration was urgent its interruption just below a locality in the northward movement or just above it in the southward might be expected sometimes to bring about a twofold result — scarcity or absence for a time in the locality, as there would be no necessity for an early stop, and a wave of augmented proportions in the territory in which the first pause was made. The varying size of waves when the highway of migration is clear may, perhaps, in part be thus accounted for, by previous damming up and concentration. The apparent smallness of a wave may not improbably be due sometimes to its centre of abundance not resting in a locality, it being above or below or to one side of it during the halt. During the reign of ice and snow, interruption of northward progress not infrequently results in a regurgitated movement, when occurring to the northward of this locality, as has been stated in previous portions of this article, having the appearance of a wave from below. In this connection, see 'Report on Bird Migration in the Mississippi Valley,' pp. 29, 30.

An exemplification of involuntary migration is seemingly afforded in the great flight of Killdeers that appeared suddenly along the New England coast in the latter part of November, 1888 (Chadbourne, Auk, VI, p. 255). This movement was apparently from the southward, in the path of a storm.

Variability imputed to variableness in the location of isolated communities, entailing variation in paths of movement, is yet to be spoken of. Upon such ground appears to be explained the lateness of arrival from the south of the Yellow-throated Warbler in years when other early migrants were not belated—a variation within narrow limits in the route pursued by the vanguard being the probable cause of tardiness. In the years of early occurrence there was no indication that the migration of this species was obstructed, either by influences in this locality or above it. The conditions seemed especially favorable, rather than adverse.

The reported wandering northward of hornotines in certain species (as the American Egret and Little Blue Heron—Rep. Bird Migr. Miss. Vall., pp. 82, 83) presents a curious phase of erratic movement. A sort of irregular migration is manifested in the occurrence of 'accidental visitants.' It is surprising, rather than otherwise, that birds do not stray more frequently from their normal range, considering the possibilities of their being storm-driven or of becoming bewildered and losing their course. As movements pass over and around localities it follows that a station in advance may sometimes be occupied earlier than an intervening one.

To recapitulate: Periodic variability—habitual absence or habitual comparative scarcity in one movement and customary presence or customary greater abundance in the opposite—in this locality is ascribed, aside from the influences of environment, to semi-annual change in line of migration, a different route being followed in the northward movement than in the southward. Erratic variability—irregular and uncertain occurrence, in transient migrants—is attributed to variation of route through variation, eastward or westward, in the location of isolated communities, and to diverting meteorological agencies, causing deflection and interruption of movement, the former manifested particularly through the presence or increased abundance of species whose ordinary highway of migration lies further to the east or west, the latter by the stoppage of progress in the locality, above, or below it, resulting sometimes in regurgitated and involuntary migration.

Local Causes, affecting Distribution, producing the Appearance of Irregularity of Migration.—Causes underlying local

distribution often tend to give the appearance of exceptional abundance, or the opposite, rendering more apparent, or less so, the movements that are taking place without obstructing them. Influences affecting the food-supply are most potential. Wilson's Snipe is particularly abundant here in the northward movement during wet seasons, the rain increasing the limited food area by rendering the high 'black-jack' lands boggy. September 6, 1888, it rained heavily for seven hours, terminating a drought that had been prevailing and converting the level 'black-jack' fields of recently sown oats into swampy flats. An isolated patch of four or five acres, immediately after the rain, held more Pectoral Sandpipers than it was ever my fortune to see before in this locality at one time. Until the ground was dried this spot was a rendezvous for passing Sandpipers, the species varying from day to day. Such birds are seldom seen here away from mill-ponds, as congenial haunts are wanting, though sometimes observed high overhead in the flush of migration. Nighthawks, Chimney Swifts, and Swallows are most conspicuous during migration in damp weather. Excessive rain causes the American Woodcock to appear more numerous when migrating through its desertion of the low grounds. An especial instance was during the latter half of August, 1887, which was a month of continual rains.

The fields of heading oats attract passing flocks of Bobolinks in May. In September when the crop is being harrowed in, the Killdeers, in the height of southward migration, occupy the same ground—a plantation devoted to this grain showing an abundance to be observed nowhere else in the neighborhood. A large bed seeded to clover the first of May in a yard in the town of Chester, became the scene of quite a gathering of Indigo Buntings, mostly males, one season. They reached the number of a score and remained until all the seeds were eaten up. Their presence excited some comment, and curious were the explanations advanced to account for it, whence they came being a mystery.

Variability as occasioned by Topographical Conditions.—As is well known, localities on the same parallel, owing to different topographical features, often exhibit diversity in time of occurrence similar to that arising from difference in latitude. The appearance of north-bound migrants along the course of the larger rivers earlier than in the adjacent territory in the Mississ-

sippi Valley is frequently alluded to in the 'Report on Bird Migration.' In this locality this is seen in miniature, the first arrivals from the south in many species usually being found along the streams leading to the Broad and Catawba Rivers and the Low-Country. On the coast, in the northward movement, birds, as a rule, appear sooner than in the Piedmont Region. For example, Dr. Coues mentions the occurrence of the Tree Swallow in numbers at Fort Macon, N. C., in January (Proc. Acad. Nat. Sci. Phila., 1871, p. 21). In this locality none have ever been seen before March. The loitering of species along the coast in autumn lengthens out their period of migration, the closing movements taking place later than in the Piedmont Region.

II. Variability in the Occurrence of Breeding and Winter Residents Independent of Failure of Food or Severity or Mildness of Season.

Isolated Communities.—The spirit of gregariousness is a marked feature in bird life. It is manifested after the breeding season in the woodland groups of associated Titmice, Chickadees, Kinglets, etc., in the winter assemblages of Vesper Sparrows, American Crows, Meadowlarks, or Robins, and in the congregation of the highly gregarious species, as the 'Blackbirds' and the Passenger Pigeon, and in a lower degree in the breeding colonies where the birds are generally dispersed within circumscribed limits, as in the Grasshopper Sparrow, and perhaps as in the Scarlet Tanager as observed by myself at Cæsar's Head (Auk, VIII, p. 329) and other birds similarly restricted. As the spirit to concentrate is so dominant, and as there is local distribution even within the narrow bounds of a neighborhood, it is not strange that there should be local distribution involving larger areas, particularly where a species is not sufficiently abundant to fully occupy a territory, either through actual paucity, or because the territory is on the borders of the habitat. So it happens that toward the extremes of range the individuals of a species, in many birds at least, are inclined to aggregate into isolated communities, being more or less plentiful in a particular locality while the

surrounding country is not inhabited, or at best but very sparsely so. Thus in this vicinity the Robin has been found to be of rare occurrence in the breeding season except in a single locality where a colony has flourished for years. The Grasshopper Sparrow, though very common, is likewise local here as a summer resident. At northern extremes of breeding range this gathering into isolated communities appears to be illustrated in the Blue Grosbeak, Mockingbird, and Carolina Wren. In winter time it is conspicuously exemplified in the Robin. Here in Chester County they may be wanting in December and January, and yet be abundant in a locality far to the northward. This, too, when the bulk of the species on the Atlantic Slope winters to the southward of this region. Certain essentially trans-Appalachian species are inclined to be very local on this side of the mountains, as the Dickcissel in summer and Leconte's Sparrow in winter. Henslow's Sparrow and Bewick's Wren appear to afford examples of local distribution where a species, in the aggregate of individuals, is not sufficiently abundant to populate the region embraced within the central portions of its range. As has been indicated, isolated communities vary in character. A single company or a small colony may alone represent a species in a locality, or numerous flocks may occur, as is sometimes the case in the Robin, or there may be general dispersion, as in Bewick's Wren. It may be queried whether an incipient disposition to gregariousness, perhaps limited chiefly to contemporaneous migratory movement, may not be a factor in the geographical distribution of many birds, in the more common species it being manifested by dispersion over widespread areas, and in the rarer, either by restriction within narrow boundaries, or by segregation into isolated communities or local centres of distribution.

It remains to be said that local distribution dependent strictly upon environment is not to be confounded with the isolated communities spoken of. Uncongenial situations are not inhabited. Land birds do not resort to water, nor do typical woodland birds frequent the fields.

Variability in the Location of Isolated Communities. — While the Robin may breed locally year after year in the same locality, other species also local here in distribution may occur

irregularly, being present for one or more seasons and then rare or absent for a varying period.¹ The Dickcissel is a remarkable example. During the first half dozen years I paid attention to the birds of this section it was not observed, then it was common locally for two summers. Afterwards it was not met with though my observations were continued six years longer.² A parallel on a smaller scale, immediately under the eye, appears to be supplied in the shifting of breeding grounds, as observed here in the Meadowlark — a particular field being in favor for a single season or longer and then deserted and another, perhaps a mile or two away, occupied. In lapse of time there may be a returning to former haunts. The Meadowlark is also more numerous in some summers than others. This fluctuation in abundance is esteemed to be but a more extended shifting of breeding grounds — the position of isolated communities varying so that different localities are occupied in different seasons. As the increase is abrupt instead of gradual it is obvious that the fluctuations do not arise from destruction of the birds. It has not been determined that storms in any way influence the location of isolated communities.

The irregularity here in winter of the Robin, Bewick's Wren, and certain other birds has been commented upon at length in a former part of this article, and explained also on the ground of variability in location of isolated communities. A parallel in miniature seems to be found in the restricted distribution of some of the less abundant winter birds of this neighborhood, particular situations being frequented for the season to the exclusion of others apparently equally attractive. That migration does not fail to take place in the Robin or Bewick's Wren when either is wanting in winter is proven by their occurrence during the height of migration. The presence of the

¹ I speak with some positiveness of the absence of birds, as I have had opportunity for thorough observation, not having been trammelled by the restrictions prevailing in more thickly settled communities.

² Instances of its erratic appearance or abandonment are not wanting in other localities. Cf. Langdon (Ohio), Abst. Proc. Linn. Soc. N. Y., No. 5, p. 11; Butler, 'Birds of Indiana,' p. 77; Coues and Prentiss, 'Avifauna Columbiana,' p. 67; Merriam (Connecticut), Trans. Conn. Acad., IV, p. 43; Trotter (vicinity of Philadelphia), B. N. O. C., IV, p. 235; Lloyd (western Texas), Auk, IV, p. 294; Dutcher (Long Island), *ibid.*, VI, p. 137; etc.

Robin locally far north where the snow covers the ground for months dispels, too, all idea that its absence is due to removal wholly to the southward.

Cold and warmth apparently affect only the winter migratory movements of isolated communities, not otherwise controlling location in any particular locality in the normal winter range. For example, Bewick's Wren may be rare here during December and January in a mild winter and quite common during a severe one, or the opposite may be true, in either case the species being fairly numerous during the height of migration. In the phenomenally mild winter of 1889-90 they were absent until the close of December when a slight movement occurred, apparently the advance of an isolated community from below, for there was unmistakable northward movement in other species. The height of its migration was reached in March as in ordinary years. The sudden influx of Robins in the early part of January, 1887 (Auk, IX, p. 29) with the coming of snow, and their disappearance on the return of milder weather seems to have been an instance of migratory movement of a large community from above, for the regular northward migration took place at the usual time. Severer December and January snows, too, have failed, before and since, to occasion such intrusions. It is a curious fact that migration should take place in the Robin with the advent of snow at the South while flocks remain during the entire winter "in the valleys among the White Mountains, where snow covers the ground from October to June, and where the cold reaches the freezing-point of mercury" (Brewer, Hist. N. A. Birds, Land Birds, I, p. 26).¹ The explanation I would offer is, that the birds which visited us had been residing below the snow-line and were dependent on account of their great numbers chiefly upon the ground for food, and when the ground was covered by snow, they had no alternative but to remove southward and await its disappearance. The closing words, which I have omitted, in the quotation just cited, "attracted by the abundance of berries," explain their presence in New Hampshire.

Food as bearing upon the location of isolated communities remains to be considered. In 'off years' of species whose absence is attributed to variability in location of such communities there has

¹ See Auk, VIII, p. 317, for instance of Robins wintering in numbers in Quebec.

been no visible failure of food in this locality. The winter migratory movements of the Robin prove that a host may find ready subsistence where few or none have been previously sojourning. It is evident that abundance of food alone does not insure presence. When limited in numbers only a small area can be thickly inhabited, no matter how inviting the surrounding region may be. As some place must be selected when birds are not sufficiently abundant to populate the whole region temporarily available for residence, choice is made, though it may be a temporary one, as is the case in the Red-winged Blackbird here locally in winter, or it may be more permanent, as in the Robin, here in summer, or, in a smaller way, as in the Prairie Horned Lark (*Auk*, VIII, pp. 57, 58). Below the territory where snow is frequent, there must be wide opportunity for selection, but where the ground is covered for a long time, only such places as afford food on trees, etc., can be inhabited.

The absence of the Red-headed Woodpecker in Lewis County in northeastern New York (Merriam, *B. N. O. C.*, III, p. 124) in winters when there were no beechnuts left on the trees, is a circumstance bearing directly upon this point. That this Woodpecker should winter in numbers, locally, in New York, even in the severest seasons, and in Vermont (Knowlton, *B. N. O. C.*, VII, p. 63), and be absent here from October to April for successive years, may seem singular. In the abandonment of this locality in winter, however, it does not present any different feature than is exhibited in the Robin. The literature abounds in references to the erratic distribution and movements of this Woodpecker. The explanation appears simple. It is a bird that is distributed in isolated communities, and the communities vary in location, in the adjustment localities remaining untenanted for a varying period. Its absence in this vicinity in winter is understood to signify that the summer residents have departed, that the migrants have passed on, and that winter birds have centred elsewhere. Scarcity or abundance in summer is explained by shifting of position of breeding communities, and in the height of migration, by variation of lines of movement.

With the exception of the Dickcissel, the irregular breeding and winter birds mentioned above have been of habitual occur-

rence during the height of their migration. There are other birds that are uncertain in migration as well as at other seasons, as the Red-breasted Nuthatch here and the American Crossbill in the lower part of the State (Wayne, Auk, IV, pp. 287-289). This inconstancy seems attributable to a shifting of the lines of movement so that these localities are reached in some years and not in others. Both species are of local distribution in the breeding season here at the South, being confined apparently to the higher mountains. The irregularity reported by Dr. Cooper (Proc. U. S. Nat. Mus., II, p. 243) in Lawrence's Goldfinch, Lazuli Bunting, and Western Bluebird seems but further illustration of variability in location of isolated communities. Additional instances in Chester County in winter appear to be afforded in the Short-eared Owl, Purple Finch, Pine Siskin, Towhee, Palm Warbler, and Brown Creeper. In the breeding season the tendency to variability is not so great as in winter; witness the Robin in this locality. The Passenger Pigeon exemplifies variability in a high degree. Where there are great numbers food doubtless enters as an immediate factor in their movements, their erratic mode of migration being accentuated by necessity of continually seeking new feeding grounds. Fear of persecution probably causes them to avoid many localities, particularly in the location of their 'nestings.'

Where there has been no great change wrought in the face of a region, it is an open question whether much of the alleged extension of range of birds may not be simply shifting of isolated communities within ordinary limits of habitat.

Summary.—In species of uncertain occurrence in the height of migration, irregularity in breeding or winter residence that cannot be attributed to severity or mildness of season or to failure of food is ascribed to variation in lines of movement (facilitated by local distribution), the migration being regularly performed, but routes varying so that the same localities are not visited every season; in species of habitual occurrence in the height of migration, such irregularity is ascribed to variation in location of isolated communities at extremes of habitat—the birds in both cases not being sufficiently abundant to populate the whole region embraced within their range, thus necessitating choice of abode, which often results in absence in localities that have been favored in other seasons.

The abrupt occurrence in the depth of winter of a species that subsequently appears in greater numbers in the height of northward migration is imputed to migratory movement of an isolated community, the birds coming from the north if cold and from the south if warm.

(*To be concluded.*)

DESCRIPTIONS OF FIVE NEW BIRDS FROM MEXICO.

BY E. W. NELSON AND T. S. PALMER.

Megascops pinosus, sp. nov.

Type No. 131517, ♂ juv., U. S. National Museum, Department of Agriculture Collection, from Las Vigas, Vera Cruz, Mexico, June 9, 1893. Collected by E. W. Nelson. (Original No. 1235.)

Measurements: Wing, 132 mm. (5.20 in.); tail 61.5 mm. (2.38 in.); tarsus, 28 mm. (1.18 in.).

Color.—Crown including ear tufts, neck and back, with upper tail coverts, dark clove brown obscurely mottled and faintly barred with dull cinnamon with faint traces of dull grayish. About the neck behind is a narrow collar in which the feathers are distinctly barred with grayish and dull cinnamon. Feathers of chin, cheeks, ear coverts, lores and sides of forehead grayish white irregularly and finely barred and mottled with blackish brown. Entire lower surface except chin barred with grayish white and clove brown, the white bars being shaded or washed in part, particularly along the flanks, with pale cinnamon. In many instances the brown bars are connected by fine shaft-lines of brown which do not affect the general pattern. The barring on the throat and upper breast is finer or narrower than elsewhere. The rest of under surface has the alternate light and dark bars, three of each on each feather, of equal width and strongly contrasted. This produces a strong pattern of coarse light and dark barring which is quite unlike that of any other member of this group known to us. The feathering of feet and tarsus is dull grayish mottled with dark brown. Toes scantily feathered. Quills clove brown with a series of light, semi-circular and subquadrate spots along margin of

outer web. Near the base of outer quills these spots are nearly pure white on some feathers becoming cinnamon toward the tips. On inner quills they are all dull cinnamon. Secondaries and tertials clove brown with dull cinnamon bars on outer webs, most of these bars being mottled with the ground color of the feathers. On inner vanes of quills and secondaries the pale spots on outer vanes are matched by indistinct light bars. This mottling mixed with gray extends over most of the surface of innermost tertials. Large quill of alula bordered with a fine white edging connecting three pure white spots on outer web. Both webs of second quill of alula and inner web of larger quill with three spots of dull cinnamon. Lesser and middle coverts smoke brown with faint mottling of cinnamon. Greater coverts clove brown bordered along outer vane by mottling and spots of grayish and dull cinnamon. Tail, color of quills, narrowly barred with broken lines and mottling of pale cinnamon.

Unfortunately the only specimen of this bird in the collection is immature. It is very different in the character of its markings from the young of any other known *Megascops*. The specimen was killed in the pines at the northeast base of the Cofre de Perote near Las Vigas, in Vera Cruz, at an altitude of over 8,000 feet.

Megascops ridgwayi,¹ sp. nov.

Type No. 131518, U. S. National Museum, Department of Agriculture Collection, from Patzcuaro, Michoacan, Mexico, July 23, 1892. Collected by E. W. Nelson. (Original No. 218, sex unknown.)

Measurements (taken from dry skin): Wing, 146 mm. (5.75 in.); tail, 65 mm. (2.55 in.); tarsus, 30.5 mm. (1.20 in.).

Color.—Entire top and sides of head and neck, back and rump, dull cinnamon-rufous. Feathers of crown and back streaked with narrow shaft-lines of blackish with faint indications of transverse mottling or bars. The quills, secondaries and tertials are hair-brown with rows of subquadrate spots along the outer webs not quite reaching to the shaft. These spots are a little longer than broad and are about the same color as the back except on the quills and about the bend of the wing where they become paler and are almost white in a few places. The inner webs of the quill feathers are crossed by faintly marked bars of lighter shade, matching the spots on outer web. On the inner webs of secondaries and

¹ We take pleasure in dedicating this species to Mr. Robert Ridgway, Curator of Birds in the U. S. National Museum, to whom we are indebted for many courtesies.

tertials these inner web bars are paler, becoming ochraceous-buffy along the inner border of the vane. Scapulars, color of back with a large ovate whitish spot extending obliquely back across outer web of feather near tip and encroaching on the inner web as a point. Lesser and middle coverts very dark cinnamon-rufous with broad heavy shaft streaks of blackish. Lores grayish with hairs black-tipped. Extending back from lores on sides of forehead over each eye is a series of feathers having large median white spots narrowly bordered with darker. Cheeks cinnamon rufous. Ear coverts grayish, edged with cinnamon rufous and tipped with blackish. Feathers of chin whitish; throat feathers with broad blackish shaft-lines along entire length bordered on each side by dull pale cinnamon. Breast dull, dark cinnamon-rufous faintly mottled with darker. Feathers of the adult plumage coming in here are heavily marked with a broad shaft-streak occupying one-third of the feathers. Remainder of lower surface very pale cinnamon with faint hoary gray and dark mottling. Feathering of legs and feet dull pale buffy. Tail feathers hair-brown broadly washed along outer web and about tips with cinnamon-rufous. A mottling of the same color crosses the feathers forming irregular broken bars.

This species is smaller than *Megascops asio floridanus* and agrees very closely in size with *M. cassini* from the vicinity of Jalapa and Mirador in Vera Cruz, eastern Mexico, but is readily distinguishable from it by the scantily feathered toes. The type is a full grown young in the red phase. It was killed in the pines at an altitude of 8500 feet. Two adults of this species, in the gray phase, were seen at Patzcuaro, where they were kept as pets in a store, but the owner refused to part with them.

Glaucidium fisheri,¹ sp. nov.

Type No. 131519 ♀, U. S. National Museum, Department of Agriculture Collection. From Tochimilco, Puebla, Mexico. Collected by E. W. Nelson August 7, 1893. (Original No. 1454.)

Measurements: Length of wing, 87.6 mm. (3.45 in.); tail, 59.6 mm. (2.35 in.); tarsus, 19.3 mm. (.76 in.); chord of culmen, 8.9 mm. (35 in.).

Color.—Back bistre brown with a warm tinge of vandyke. Top of head and occiput hair-brown with a faint tinge of bistre. The forehead and fore part of crown including most of the interorbital area is marked with shaft streaks of white. Along the sides of the crown extending

¹ Named in honor of Dr. A. K. Fisher, in recognition of his valuable work on the Hawks and Owls of the United States.

back to the nape are numerous concealed white spots. The feathers of median part of crown and occiput are plain to the base or with extremely fine concealed shaft-lines of white. There is a narrow nuchal collar of feathers having concealed white spots with brown and blackish edgings. Scapulars bistre-brown like the back but with a few small concealed spots of dull cinnamon. Primary coverts sepia-brown with cinnamon spots and edgings at tips. Quills dark clove-brown with a few marginal spots of dull cinnamon and crossed by faint narrow bars of lighter ending in subquadrate whitish spots on their inner webs. Tail uniform in color with the wings and marked by a series of seven white spots along each border of the middle tail feathers; all of these spots are shaded about their border by a tinge of dull cinnamon. On the two or three outer pairs of tail feathers these spots become very small, giving the appearance of broken bands or bars across the tail. Upper tail coverts like back with mottling of dull cinnamon. Feathers of lores white at base but black on the hair-like distal two thirds. A very narrow whitish border on eyelids. The feathers on sides of the face, including ear-coverts are hair-brown below the eyes, and mottled with blackish-brown, dull cinnamon and whitish over the ears. A very narrow series of white feathers on the chin are continuous with the well marked white malar stripe which reaches back on each side to beneath the ear. The hair-brown color of the crown extends forward to the sides of the throat below this white bar. On each side of the breast is an area of brown slightly paler than the back and continuous with a narrow collar of the same color which margins the brown area of the back in front. Across the chin and back along sides of the throat there is a narrow line of feathers hair-brown at base and pale cinnamon at tip forming a thin band uniting the brown areas on the sides of the breast. Throat and middle line of breast white. Rest of lower parts white heavily streaked with brown; these streaks being similar in shade to the back, along the fore part of the flanks, but elsewhere, much darker sepia-brown. Feathers on front of thighs are dull cinnamon; elsewhere on legs they are white except for a fine mottling of dingy hair-brown on front of tarsus. Under wing-coverts yellowish white. Border of shoulder on under side pale cinnamon sparsely streaked with dark brown. Bill greenish-yellow at tip, horn color at base. Claws black at tip, horn color at base.

General characters.—Size small; somewhat similar to *Glaucidium cobanense* but differing from it in the bistre-brown instead of rufous plumage; color of the head distinct from that of the back; forehead marked with shaft-streaks of dull white extending back to nuchal collar as concealed spots instead of the obscure bars of brighter rufous of *G. cobanense*. The latter species is described as being almost uniform rufous while in *G. fisheri* the back is bistre-brown tinged with vandyke in marked contrast with the hair-brown of the top of the head.

Glaucidium cobanense was described by Sharpe¹ from an examination of six specimens from Vera Paz, Guatemala, no one of which seems to have been designated as the type. The measurements of the type of *G. fisheri* and four of the specimens of *G. cobanense* are given below:—

	<i>Wing.</i>	<i>Tail.</i>	<i>Tarsus.</i>
<i>Glaucidium fisheri</i>			
♀ Tochimilco, Puebla, Mexico	3.45	2.35	.76
<i>Glaucidium cobanense</i>			
Ad., Laguna, Vera Paz, Guatemala	3.90	2.70	.85
Ad., El Paraíso, Vera Paz, Guatemala	4.10	2.70	.80
" " " "	3.90	2.75	.80
Juv., Volcan de Fuego, Vera Paz, Guatemala	3.55	2.75	.75

On page 199 of the 'Catalogue of the Striges in the British Museum,' are given the following additional measurements for this species: Wing, 3.45; tail, 2.55; tarsus, .75. These are evidently taken from a specimen from Coban, Vera Paz, obtained from M. A. Bouvier—one of those referred to in the original description. From these measurements it will be seen that the specimen of *G. fisheri*, although a female, is only as large as the smallest specimen of *G. cobanense* and appreciably smaller than the average measurements of five specimens of the latter species.

The type and only known specimen of this handsome little Owl was shot from a ledge of rocks where it had taken refuge from a passing shower. It was found among the oaks and pines on the southeast slope of Mount Popocatapetl at an altitude of about 6500 feet, near the town of Tochimilco in the state of Puebla.

Aimophila rufescens pallida, subsp. nov.

Type No. 131516 ♀, U. S. National Museum, Department of Agriculture Collection, from Etzatlán, Jalisco, Mexico, June 16, 1892. Collected by E. W. Nelson. (Original No. 180.)

Measurements (of dried skin): Wing, 75 mm. (2.95 in.); tail, 71 mm. (2.80 in.); tarsus, 25 mm. (1.00 in.); culmen, 17.5 mm. (.69 in.).

¹ Ibis, 3d ser., V, 1875, pp. 47-49, 260.

This new subspecies may be recognized by its generally paler colors in comparison with typical *rufescens* from near the type locality, Temascaltepec in the state of Mexico. Numerous other specimens of this bird from Jalapa to the City of Orizaba, in Vera Cruz, are also typical in coloration. The following detailed comparison shows the most marked characters separating the two forms. It may be noted here that the plate of *Hæmophila rufescens* in the 'Biologia Centrali-Americana' is an excellent representation of the typical *rufescens*.

A. rufescens.

Crown dark rufous or chestnut with a distinct but irregular ashy median stripe, and with a blackish border on each side.

Lores dark gray.

Superciliary stripe white, washed with fulvous from nostril back to eye; over and back of eye along side of crown clear dark ashy.

Post-ocular streak blackish with very dark rufous edgings to feathers.

Back dark chestnut with distinct although small, black shaft-streaks near ends of feathers.

Chin, throat and malar stripe white, washed with fulvous.

Sides of neck and body olive gray washed with fulvous, becoming warm bistre brown on the flanks.

Under mandible pale yellowish horn color.

Typical *A. rufescens* is a bird of the damper parts of eastern and southern Mexico; the present form comes from Etzatlan,

A. rufescens pallida.

Crown pale rusty rufous, the median ashy streak obsolete and the dark border on each side of crown merely indicated by a darkening of the rufous of the center.

Lores ashy.

Superciliary stripe white from nostril to eye, thence back along crown dingy ashy.

Post-ocular streak much lighter and more rufous than in typical birds.

Back paler with the dark shaft-streaks nearly obsolete.

Chin, throat and malar stripe white.

Sides of neck and body pale olive gray, much ashier than in typical birds, becoming somewhat warmer and browner on the flanks.

Under mandible dark bluish horn color.

Jalisco, on the more arid southwestern border of the tableland region.

Sitta carolinensis mexicana, subsp. nov.

Type No. 131515 ♂, U. S. National Museum, Department of Agriculture Collection, from Mt. Orizaba, Puebla, Mexico, April 26, 1893. Collected by E. W. Nelson. (Original No. 1104.)

Measurements (taken from dry skin): Wing, 89 mm. (.350 in.); tarsus, 19 mm. (.75 in.); culmen, 19.3 mm. (.76 in.); bill from nostril, 13 mm. (.52 in.).

Color.—Above similar to *Sitta carolinensis aculeata* including the dark markings on the tertials. Under surface decidedly ashy. Flanks dull bluish gray nearly concolor with the middle of the back.

The White-bellied Nuthatches from the mountains of south-central Mexico present certain characteristics by which they may be distinguished from either of the two recognized forms of the United States. The Mexican bird has a beak averaging rather smaller than that of *Sitta carolinensis* from the eastern United States. With this character it combines the color of the dorsal surface and dark markings on tertials of *S. aculeata*, and differs from both northern forms in having only the chin and throat pure white—the rest of the lower parts in the present form being washed with a distinct ashy shade, heaviest on the flanks and posteriorly.

This new race is a common breeding resident on Mt. Orizaba in Puebla and also in the high mountains about the Valley of Mexico, and is found thence westerly along the Sierra Madre at least to the Volcano of Colima. It was also seen in the mountains of Hidalgo. Beyond this the work has not extended far enough to determine the limits between it and the other forms.

SIXTH SUPPLEMENT TO THE AMERICAN ORNITHOLOGISTS' UNION CHECK-LIST OF
NORTH AMERICAN BIRDS.

BY ORDER of the Council of the American Ornithologists' Union the Committee on Classification and Nomenclature of North American Birds has prepared the following report on the species, subspecies, and changes of nomenclature proposed during the year ending November, 1893, forming the Sixth Supplement to the American Ornithologists' Union Check-List. The Committee met in Cambridge, Nov. 21-23, 1893, with the following members present: Allen, Brewster, and Merriam. On all but one question the vote was unanimous.

The numbers at the left of the scientific names facilitate collation with the Check-List. The interpolated species and subspecies are numbered in accordance with the provision made therefor in the Code of Nomenclature (p. 14, last paragraph).

Committee	{ ELLIOTT COUES, <i>Chairman.</i> J. A. ALLEN. WILLIAM BREWSTER. C. HART MERRIAM. ROBERT RIDGWAY.
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I. ADDITIONS.

305 *a.* ***Tympanuchus americanus attwateri* (BENDIRE).**

Attwater's Prairie Hen.

Tympanuchus attwateri BENDIRE, Forest and Stream, XL,
No. 20, May 18, 1893, 425.

Tympanuchus americanus attwateri BENDIRE, MS.

[B 464, part, C 384, part, R 477, part, C 563, part.]

HAB. Coast region of Louisiana and Texas.

373 *g.* ***Megascops asio aikenii* BREWST.**

Aiken's Screech Owl.

Megascops asio aikeni BREWST., Auk, VIII, April, 1891, 139.
[B—, C—, R—, C—.]

HAB. Plains, El Paso County, Colorado, south probably to central New Mexico and northwestern Arizona.

373 h. *Megascops asio macfarlanei* BREWST.

MacFarlane's Screech Owl.

Megascops asio macfarlanei BREWST., Auk, VIII, April, 1891, 140.

[B 49, part, C 318, part, R 402, part, C 465, part.]

HAB. East of the Cascades in Washington, interior of southern British Columbia, and eastward into Montana.

567 d. *Junco hyemalis pinosus* LOOMIS.

Point Pinos Junco.

Junco pinosus LOOMIS, Auk, X, April, 1893, 47.

[B—, C—, R—, C—.]

HAB. Vicinity of Monterey, California.

725 c. *Cistothorus palustris griseus* BREWST.

Worthington's Marsh Wren.

Cistothorus palustris griseus BREWST., Auk, X, July, 1893, 216.

[B 268, part, C 51, part, R 67, part, C 79, part.]

HAB. Coast region of South Carolina and Georgia.

740 b. *Parus hudsonicus columbianus* RHOADS.

Columbian Chickadee.

Parus hudsonicus columbianus RHOADS, Auk, X, Jan. 1893, 23.

[B 296, part, C 33, part, R 45, part, C 49, part.]

HAB. Rocky Mountains, from the Liard River south into Montana.

II. CHANGES OF NOMENCLATURE.

320. ***Columbigallina passerina* (LINN.).** This becomes *Columbigallina passerina terrestris* CHAPM.

Columbigallina passerina terrestris CHAPMAN, Bull. Am. Mus. Nat. Hist., IV, 1892, 292.

The type of *C. passerina* came from the Island of Jamaica and is subspecifically separable from the bird of the southeastern United States.

341. **Buteo albicaudatus** VIEILL. This becomes

341. **Buteo albicaudatus sennetti** ALLEN.

Sennett's White-tailed Hawk.

Buteo albicaudatus sennetti ALLEN, Bull. Am. Mus. Nat. Hist., V, 1893, 144.

HAB. Rio Grande Valley, Texas, and southward into Mexico.

417 a. **Antrostomus vociferus arizonæ** BREWST. This becomes

Antrostomus vociferus macromystax (WAGLER).

Caprimulgus macromystax WAGLER, Ibis, 1831, 533.

Caprimulgus vociferus macromystax HARTERT, Ibis, 1892, 286.

Cf. HARTERT, l. c.

494 a. **Dolichonyx oryzivorus albinucha** RIDGW. This becomes a synonym of *Dolichonyx oryzivorus* (LINN.). (*Cf.* CHAPMAN, Auk, X, Oct. 1893, 311.)

GENUS **Campylorhynchus** SPIX (p. 325). This becomes

GENUS **Heleodytes** CABANIS.

Heleodytes CABANIS, Mus. Hein. I, 1850, 80. Type *Furnarius griseus* SWAIN.

Campylorhynchus SPIX, 1824, is preoccupied in Coleoptera by *Campylirhynchus* MEGERLE, 1821. (*Cf.* PALMER, Auk, X, Jan. 1893, 86.) Hence Nos. 713 and 714 will stand as follows:—

713. **Heleodytes brunneicapillus** (LAFR.).

714. **Heleodytes affinis** (XANTUS).

III. FORMS CONSIDERED AS NOT ENTITLED TO RECOGNITION.

Megascops asio saturatus BREWST., Auk, VIII, April, 1891,
141.

Considered as a synonym of *Megascops asio kennicottii* (ELLIOT), the range of variation in a large series of specimens of *M. a. saturatus* covering all of the alleged distinctive features of the supposed unique type of *M. a. kennicottii*, the range of which latter is now extended southward over the supposed habitat of *M. a. saturatus*.

Parus hudsonicus ungava RHOADS, Auk, X, Oct., 1893, 328.

Considered as not separable from *Parus hudsonicus* FORST., owing to the insufficiency of the alleged characters. It was tentatively proposed, and confessedly without comparison with specimens of *P. hudsonicus* from any point near the type locality of the species.

Parus hudsonicus evura COUES (Key N. Am. Birds, 1884, 267). (*Cf.* RHOADS, Auk, X, Oct., 1893, 331.)

Considered as inseparable from *Parus hudsonicus* FORST.

IV. PROPOSED CHANGES OF NOMENCLATURE REJECTED.

Conuropsis vs. Conurus, and hence *Conuropsis carolinensis* vs. *Conurus carolinensis*. (*Cf.* SALVADORI, Cat. Birds Brit. Mus. XX, 1891, 203.)

The type of *Conurus* (LESSON ex KUHL) is considered to be *Psittacus carolinensis* Gm., as originally determined by the A. O. U. Committee by the principle of elimination (*cf.* Canon XXIV, A. O. U. Code of Nomenclature). *Conuropsis* SALVADORI, based on this species, becomes therefore a synonym of *Conurus*.

Corvus americanus caurinus (BD.) vs. *Corvus caurinus* BD.
(*Cf.* RHOADS, Auk, X, Jan. 1893, 18-21.)

The proposed change was not considered expedient, the case being deemed not well enough understood to warrant any change.

Melospiza lincolni (AUD.) vs. *Melospiza lincolni striata* BREWST. (*Cf.* RHOADS, Auk, X, Jan. 1893, 21; Proc. Acad. Nat. Sci. Phila. 1893, 51.)

The proposed change was not adopted, *M. l. striata* being considered as entitled to recognition as a local northwest-coast form.

Vireo gilvus swainsoni (BD.) vs. *Vireo gilvus* (VIEILL.). (*Cf.* RHOADS, Auk, X, Jan. 1893, 21; Proc. Acad. Nat. Sci. Phila. 1893, 53.)

The type of *Vireo swainsoni* BD. came from Petaluma, California, instead of from Steilacoom, Washington, as represented (l. c.). Furthermore, in view of the instability of the *Vireo gilvus* group as represented in different parts of North America, and the tendency to development of slightly differentiated local forms, it was deemed unnecessary to recognize any of them in nomenclature.

Sylvania pusilla (WILS.) vs. *Sylvania pusilla pileolata* (PALL.). (*Cf.* RHOADS, Auk, X, Jan. 1893, 23; Proc. Acad. Nat. Sci. Phila. 1893, 55.)

The proposed change was not considered necessary, the material submitted to the Committee showing that true *Sylvania pusilla* is found in Vancouver Island.

V. ACTION DEFERRED.

Final action on the following was deferred.

Leptoptila brachyptera (SALVADORI ex GRAY) vs. *Engyptila albifrons* (BONAP.). (*Cf.* SALVADORI, Cat. Birds Brit. Mus. XXI, 1893, 545.)

Owing to complications of synonymous and other questions involved, final decision was deferred.

Chordeiles acutipennis texensis (LAWR.) vs. *Chordeiles texensis* LAWRENCE. (*Cf.* HARTERT, Cat. Birds Brit. Mus. XVI, 1892, 616.)

Deferred for later consideration, owing to lack of material for examination.

Icterus gularis yucatanensis BERLEPSCH. (*Cf.* BENDIRE, Auk, X, Oct. 1893, 366.)

While there is no doubt of the capture of specimens as alleged, nor of the correctness of the identification, final action was deferred pending further investigations as to the possibility of their introduction through man's agency.

Vireo huttoni obscurus ANTHONY (ZOE, Dec. 1890, 307. *Cf.* also RHOADS, Auk, X, July, 1893, 239).

Deferred for later consideration, owing to lack of material for examination.

Vireo huttoni insularis RHOADS (Auk, X, July, 1893, 239).

Deferred for later consideration, owing to lack of sufficient material for examination.

ELEVENTH CONGRESS OF THE AMERICAN ORNITHOLOGISTS' UNION.

THE ELEVENTH CONGRESS of the American Ornithologists' Union was held in Cambridge, Mass., Nov. 20-23, 1893. The three days' open session of the Union were preceded by a business meeting held at the residence of Mr. C. F. Batchelder on the evening of November 20. The open session, to which the public was invited, was held in the Nash Lecture-room of the Harvard University Museum.

BUSINESS SESSION.—In the absence of the President, Dr. Elliott Coues, who was unfortunately unavoidably detained in the West, the meeting was called to order by Vice-President William

Brewster. The report of the Secretary showed that during the year the Union had lost fifteen members,—six by death and nine by resignation, all from the Associate List. The members lost by death were as follows: Jenness Richardson,¹ who died at Bryn Mawr, N. Y., June 24, 1893, aged 36; Erastus Corning, Jr., who died at Albany, N. Y., April 9, 1893, aged 41; Benj. F. Goss,² who died at Pewaukee, Wis., July 6, 1893, aged 70; Austin F. Park,³ who died at Troy, N. Y., Sept. 22, 1893, aged 68; Charles Slover Allen, M. D.,⁴ who died in New York City, Oct. 15, 1893, aged 39.

The Secretary also presented as a part of his report the following interesting tables showing how steadily, both in membership and attendance, the Union has grown. For comparison the attendance at the Eleventh Congress is also included.

STATUS OF MEMBERSHIP AT THE OPENING OF EACH CONGRESS.

	ACTIVE.	HONORARY.	CORRESPONDING.	ASSOCIATE.	TOTAL.
1883— 1st Congress, New York.	23				23
1884— 2d " "	44	20	16	63	143
1885— 3d " "	47	25	65	64	201
1886— 4th " Washington.	45	25	69	112	251
1887— 5th " Boston.	46	25	70	143	284
1888— 6th " Washington.	45	25	67	161	298
1889— 7th " New York.	49	25	68	258	400
1890— 8th " Washington.	50	21	72	322	465
1891— 9th " New York.	47	22	72	352	493
1892—10th " Washington.	45	22	74	416	557
1893—11th " Cambridge.	48	22	73	439	582

¹ For an obituary notice, see Auk, X, 1893, p. 304.

² For an obituary notice, see *Ibid.*, p. 385.

³ For an obituary notice, see *Ibid.*, p. 384.

⁴ For an obituary notice, see the present number of 'The Auk', under 'Notes and News.'

ATTENDANCE AT EACH CONGRESS.

		ACTIVE.	HONORARY.	ASSOCIATE.	TOTAL.
1883—	1st Congress, New York.	21			21
1884—	2d " "	16	2	4	22
1885—	3d " "	16		6	22
1886—	4th " Washington.	20		11	31
1887—	5th " Boston.	17		12	29
1888—	6th " Washington.	20		17	37
1889—	7th " New York.	20		32	52
1890—	8th " Washington.	20		18	38
1891—	9th " New York.	14		32	46
1892—	10th " Washington.	20		24	44
1893—	11th " Cambridge.	17		36	53

The report of the Treasurer showed a considerable balance in the treasury of the Union.

The officers and councillors of the preceding year were re-elected. Eighty-four Associate Members were elected, but no additions were made to either the Active, Corresponding, or Honorary lists. The usual reports of Committees were received.

PUBLIC SESSION. *First day.* — The meeting was called to order by Vice-President William Brewster, and after an address of welcome of Prof. George L. Goodale on behalf of Harvard University, at once proceeded to the consideration of Scientific Papers.

The morning session was devoted to two papers on bird migration, the first by Leverett M. Loomis, entitled 'Bird Migration in Chester County, South Carolina, viewed with Reference to Cause'; the second by Frank M. Chapman, entitled 'Remarks on the Origin of Bird Migration.' Two parts of Mr. Loomis's paper appear in this number of 'The Auk' (pp. 26-39). The author summarized these parts and gave in detail the third and concluding part. Mr. Chapman's paper is published in full (*antea*, pp. 12-17).

These papers were discussed by Mr. D. G. Elliot, Mr. Francis, Prof. John Macoun, Dr. C. Hart Merriam, Mr. Loomis, and Mr. Chapman.

The first paper of the afternoon session was by D. G. Elliot on 'The Survival of the Fittest.' It was discussed by Dr. C. Hart Merriam, Dr. J. A. Allen, and Mr. Elliot.

The concluding paper of the day was by Mr. William Dutcher on 'The Labrador Duck—Another specimen with some additional data respecting extant specimens' (published *antea*, pp. 4-12). Discussion followed by Messrs. D. G. Elliot, C. F. Batchelder, M. Chamberlain, A. C. Bent, E. W. Nelson, Capt. Charles Bendire, Prof. John Macoun, Dr. C. Hart Merriam, and the author.

Second day's session.—The meeting was called to order by Vice-President William Brewster. The morning session was given to the presentation of two papers by Dr. J. A. Allen entitled 'Protective Coloration and Natural Selection,' and 'Protective Mimicry.' These papers were discussed at length by Messrs. D. G. Elliot, William Brewster, Dr. C. Hart Merriam, and Dr. Allen. The first paper particularly appealed to the individual experience of many of the members in attendance and the whole day's session might have been profitably given to a presentation of their views.

The afternoon was devoted to a paper by Frank M. Chapman on 'The Island of Trinidad and its Bird-Life, Illustrated with Lantern Slides.' Many pictures were shown of characteristic forest scenes and birds.

Third day's session.—The meeting was called to order by ex-President, D. G. Elliot. Before proceeding to the reading of papers, the Committee on Resolutions presented the following report:—

"*Resolved:* That the thanks of the American Ornithologists' Union be and hereby are tendered to Prof. George L. Goodale for the use of the Nash Lecture-room of Harvard University as a place of meeting for the Union and for other courtesies extended.

"*Resolved:* That the thanks of the American Ornithologists' Union be and hereby are tendered to the Nuttall Ornithological Club for its cordial welcome and generous hospitalities extended to visiting members.

"*Resolved:* That the thanks of the American Ornithologists' Union be and hereby are tendered to the Colonial Club of Cambridge for courtesies extended to the Union during its Eleventh Congress."

The first paper of the morning was by Mr. F. A. Lucas 'On the Tongue of *Dendroica tigrina*.' In the absence of the author it was read by Mr. F. B. White.

The second paper was by Dr. A. P. Chadbourne and was entitled 'Change in Feeding Habits of the Night Hawk since the general use of Electric Lights.' Remarks followed by Mr. Ruthven Deane.

The third paper was by the same author and described 'An Instance of Reasoning in the Scarlet Ibis.' The fourth paper was by Dr. Louis B. Bishop 'On the nest of *Cistothorus palustris*.' The fifth paper was by Mr. George H. Mackay on the 'Habits of the Double-crested Cormorant (*Phalacrocorax dilophus*) in Rhode Island' (published *antea*, pp. 18-24). It was read by Mr. William Dutcher and was discussed by Messrs. D. G. Elliot and E. H. Forbush. The sixth and last paper of the morning session was by Mr. E. W. Nelson and was entitled 'Some Mexican Notes.' The author gave a graphic description of the scenery and bird-life of the higher peaks at the southern border of the Mexican tableland.

The first paper of the afternoon session was by Mr. E. H. Forbush on the 'Capture of the Yellow-crowned Night Heron in Massachusetts.' The second paper was by Mr. Frank M. Chapman on 'General Impressions of Tropical Bird-life.' The third paper was by Dr. C. Hart Merriam who spoke informally of his recent trip to Wyoming.

At the conclusion of Dr. Merriam's remarks, the Union adjourned to meet at the American Museum of Natural History, New York City, November 12, 1894.

This was one of the most successful Congresses ever held by the Union. Many of the papers had a general bearing upon the leading biologic questions of the day and were therefore of interest to all students of natural history. That this fact was appreciated was shown by the unusual attendance of the public, the audiences sometimes reaching nearly 150, a number not approached at any previous meeting.

But the success of the Congress was not dependent alone upon its formal and official transactions. From the social standpoint the meeting was no less memorable. Cambridge is the home of the Nuttall Ornithological Club; the immediate

ancestor of the Union, and its members both individually and collectively gave a most cordial reception to the visiting organization. Each day of the session the Club entertained the Union at luncheon at the rooms of the Colonial Club, and on the evening of the 20th the members of both societies met by invitation at the residence of Mr. C. F. Batchelder and celebrated in an informal and thoroughly enjoyable way the twentieth birthday of the parent society.

RECENT LITERATURE.

Newton's 'Dictionary of Birds,' Part II.¹—The general character of Professor Newton's 'Dictionary of Birds' has already been indicated (Auk, X, pp. 357-360). Part II (Ga-Moa, pp. 305-576) contains, besides the definitions naturally to be expected, a number of especially noteworthy articles, as *Gare-Fowl* (pp. 303-308, concluded from Part I), *Geographical Distribution* (pp. 311-363), *Migration* (pp. 547-572), and *Mimicry* (pp. 572-575), some of which call for somewhat detailed notice. Among the other longer articles, which are noteworthy for their scope and varied information, are *Grouse* (6 pp.), *Guachero (Steatornis)*, *Heron* (5 pp.), *Hoactzin (Opisthoconus)*, *Hornbill* (5 pp.), *Hummingbird* (10 pp.), *Kiwi* (6 pp.), *Lark* (6 pp.), *Lyre-bird* (5 pp.), *Megapode* (4 pp.), etc.

In the twenty-five pages devoted to Migration, the general facts of the subject are set forth, and then an attempt is made to "account for the cause or causes of migration." "Want of food" is deemed to be "the most obvious cause," "far more so than variation of the temperature, though in popular belief that probably holds the first place." "As food grows scarce toward the end of summer in the most northern limits of the range of a species, the individuals affected thereby seek it elsewhere; in this way they press upon the haunt of other individuals," and so on. This, says Prof. Newton, "seems satisfactorily to explain the southward movement of many migrating birds in the northern hemisphere; but when we consider the return movement which takes place some six months later, doubt may be entertained whether scarcity of food can be assigned as its sole or suffi-

¹ A Dictionary of Birds. By Alfred Newton. Assisted by Hans Gadow. With Contributions from Richard Lydekker, B. A., F. G. S., Charles S. Roy, M. A., F. R. S., and Robert W. Shufeldt, M. D. (late United States Army). Part II (Ga-Moa). London: Adam and Charles Black, 1893.—8vo., pp. 305-576.

cient cause, and perhaps it would be safest not to come to any decision on this point." It is suggested that the more equatorial regions may be "deficient in certain necessaries for the nursery," and also that these same regions "would not supply sufficient food for both parents and offspring, the latter being, at the lowest computation, twice as numerous as the former, unless the numbers of both were diminished by the casualties of travel." On the other hand, in view of "the pertinacity with which birds return to their accustomed breeding-places," "the force of this passionate fondness for the old home" must be taken into account, "even if we do not allow that in it lies the whole stimulus to undertake the perilous voyage." Beyond these few suggestions, it is rather surprising to find little discussion of the 'causes' of migration.¹

The manner of migration is considered at some length, illustrated by the citation of a number of specific examples, and includes the discussion of routes of migration, the literature of the subject being liberally cited, either in the text or the accompanying foot-notes. The question—"How do the birds find their way so unerringly from such immense distances?" is considered to be "the most marvellous thing of all" and "by far the most inexplicable part of the matter." "Sight alone," our author thinks, "can hardly be regarded as affording much aid to birds—and there is reason to think that there are several such—which at one stretch transport themselves across the breadth of Europe, or even traverse more than a thousand miles of open ocean, to say nothing of those—and of them there are certainly many—which perform their migrations mainly by night." The fact is apparently lost sight of that even at night—at least in clear weather when birds mostly migrate—at the altitude at which birds ordinarily perform their journeys, the main features of the landscape are distinctly visible for long distances to the migrating birds, and that in reality "sight, and sight only, is the sense which directs these birds," as truly as in the case of 'homing' Pigeons, where it is admitted by "all the best authorities on that subject." In the case of birds traversing wide expanses of open sea, sight is perhaps aided by other factors, as notably the direction and temperature of the wind, combined with the fact that even when such flights are quite extended they are of comparatively short duration, being performed by birds that for the most part are exceptionally strong fliers, as many of the Grallæ, etc. Prof. Newton's idea that birds which perform their journeys by night cannot possibly be aided by sight is almost demonstrably erroneous, as any one who has spent a night on the summit of a high mountain and noted the distinctness with which the landscape is spread out below him, will readily believe.

In regard to the subject of Mimicry, we must confess surprise at finding so conservative and sensible a writer as Prof. Newton giving such unreserved support to this theory as his article on the subject shows.

¹ On this subject *cf.* Allen, Auk, X, pp. 102-104, and Chapman, *antea*, pp. 12-17.

He says: "Mimicry, with the prefix *unconscious*, which in every department of Zoology should be always expressed or understood, signifies the more or less complete likeness, in colouring or form or both, which one creature bears to another, so that in some cases one may easily be mistaken for the other, though the affinity between them may be very remote The explanation is simply that the weaker animal, or that which exists under less favorable conditions, 'mimics' the stronger, or that which is most flourishing, the mimicry being presumably effected by means of Natural Selection; but the difficulties which attend the investigation of the way in which this result is brought about, so as to render the explanation in all cases acceptable, are often extremely great, and one ought not to be surprised that some zoologists are unable to accept the explanation at all." As one of the conditions for an acceptable case of mimicry, as laid down by Wallace, is that the mimicker and the form mimicked must both share the same habitat, Prof. Newton finds it convenient to cite only about three or four good examples among the class of birds,—that of "a Cuckow to a Hawk," that of *Mimeta* (a genus of Orioles) to *Philemon* (a genus of Friar-birds), that of *Harpagus diodon* to *Accipiter pileatus* (a very weak case), and that of the genus *Tylas* to *Xenopirostris*. None of them very fully meets the conditions of a good case of mimicry, since the advantages secured by the supposed mimicry are by no means very obvious. The most that can be said is that the two forms which present a somewhat striking superficial resemblance to each other happen in each case to occupy a common habitat. A large number of other cases might be cited were it not for their dissimilarity in distribution, and a number of such are mentioned *passim* in the 'Dictionary,' as *Agapornis* and *Psittacula*, *Alæmon* and *Upupa*, *Sturnella* and *Macronyx*, *Serilophus* and *Ampelis*, *Colaptes* and *Geocolaptes*, etc., while the list could easily be greatly extended. Hence our author feels called upon to caution his readers to bear in mind "that all cases of close similarity of plumage are not necessarily Mimicry." There is not space here to discuss the subject at length (as we hope to do later in some other connection), but it may be well to suggest that there is another side to the question, and that there are other explanations of these resemblances that seem more reasonable. In fact in most instances, and at least so far as birds are concerned, it seems by no means rash to consider them as purely accidental, or cases of coincidence.¹

The article on 'Geographical Distribution' is an admirable presentation of the subject, although on minor points we should find it somewhat difficult to subscribe to all of our author's conclusions. We notice, with some surprise, the absence of any discussion of the causes, past or present, of the distribution of avine life, except incidentally in one or two cases. It may be noted that a number of important departures are made from the

¹ See further the discussion of 'Mimicry' in Beddard's 'Animal Coloration,' and the evidence and authorities, pro and con, there cited.

Sclaterian system, of which formerly Prof. Newton was a loyal adherent. Thus the Palæarctic and Nearctic Regions of Sclater are combined to form a single circumpolar area, under the name 'Holarctic Region,' while New Zealand, in accordance with Prof. Huxley's scheme, is separated from Sclater's Australian Region to form a 'New Zealand Region.' Prof. Newton's "six primary regions" are: (1) the *New Zealand Region*, (2) the *Australian Region*, (3) the *Neotropical Region*, (4) the *Holarctic Region*, (5) the *Ethiopian Region*, (6) the *Indian Region*. Each of these, except the first, is divided into a number of 'subregions,' and some of these into 'provinces,' of which lack of space here forbids a detailed notice. A map of the world accompanies the article, showing approximately these six zoögeographical Regions.

Respecting the Holarctic Region, however, we may quote as follows: "As has been stated in the introductory portion of this article, the combination intimated by this phrase [the Holarctic Region], though sanctioned in spirit by Prof. Huxley, wholly contravenes the opinion expressed by two of the leading authorities on the subject — Messrs. Sclater and Wallace. The arguments of the former being based on positive facts, or at least on what seemed at the time to be such, must be met by corresponding facts. Those of the latter having a more hypothetical foundation — the notion that each of the primary divisions of the earth's surface should comprehend about the same extent — require less consideration. The natural philosopher regards quality rather than quantity, and things must be weighed as well as measured, analyzed as well as surveyed. . . . But not to wander from our present business, no one who will investigate the Avifauna of that part of North America lying outside the boundary (if it can ever be traced) of the Neotropical Region, will find in the Nearctic area more than a single family of Birds [*Chamæidae*] that is peculiar to it, and that is a family of position so doubtful that some of those who have most closely studied it refer it to one or another of well-known families — *Paridae* or *Troglodytidae* — both of which are widely dispersed and admittedly contain genera that differ considerably. . . . Every other Nearctic family is common to the Neotropical Region or to the Palæarctic area, or to both. Thus regarded from every ornithological aspect, what has been called the Nearctic 'Region' has no right to be so accounted, since its peculiarity is numerically of less importance than some of the Subregions of the Neotropical Region. . . ."

In discussing these several regions Prof. Newton brings into strong relief their chief characteristics, and especially the prevalence of weak, isolated and ancient ornithic types in New Zealand, and to a less degree in Australia, and their greater prevalence in South America than in any other part of the world except in Australia and New Zealand. On the other hand, the "Holarctic Region seems to have the most highly developed Fauna, in that it is one from which the weakest types have generally been eliminated, though that result is chiefly seen in its Palæarctic area, and perhaps especially in the western part of this. . . ."

Part II is worthy of the high praise we have already bestowed upon Part I, and assures us that the 'Dictionary' will prove to be one of the most useful hand-books of general ornithology ever published. It would be easy to pick flaws here and there, but its general excellence would render this an ungracious task. We may, however, call attention to one singular oversight in respect to the genus *Otocoris* (or *Otocorys*, as our author prefers to write it), where in a foot-note to page 511 it is stated, "By American writers it is usually called *Eremophila*, but that name is pre-occupied in natural history." While this was formerly the case, the name *Otocoris* for the Horned Larks has been in almost universal use among American writers for a full decade, the change having been made as early as 1882, and became generally adopted as early as 1884. Such occasional slips are doubtless due to the fact that portions of the work have been bodily transferred from the 'Encyclopædia Britannica' without subjection to quite the rigid scrutiny the lapse of time has rendered necessary.

While it is not customary to look for an *index* to a *dictionary*, in the present case an index would prove an indispensable adjunct, since very few of the almost numberless technical names of genera and species, and even of the higher groups, appear as titles of articles, but must be sought in the body of the text. It is hence not to be supposed that such an important matter will be overlooked by either the author or the publishers.

— J. A. A.

Salvadori's Catalogue of the Pigeons.—The introduction to the 'Catalogue of the Columbæ'¹ gives a useful though brief sketch of the literature of the subject, from which it appears that the number of species enumerated by G. R. Gray in 1871 was 378, while Schlegel in 1873 recognized only 249. The number recognized in the present 'Catalogue' is 458, while notice is taken of 27 others regarded by the author as of a more doubtful character. The British Museum Collection, we are informed, contains, after the elimination of duplicates, 7359 specimens, belonging to 415 species. Of these species "112 are represented by typical specimens, besides 47 which are types of species that have been identified with others previously described." Only "42 species are still desiderata in the Collection!" Eleven are here described for the first time. In the acknowledgments of assistance it is stated that "the whole of the American species" were worked out with the help of Mr. Salvin.

The order Columbæ is divided into two suborders, 1, Columbæ, 2, Didi; the latter consisting of the two extinct genera *Pezophaps* and *Didus*, known thus far only from the islands of Mauritius, Réunion, and Rod-

¹ Catalogue | of the | Columbæ, or Pigeons, | in the | Collection | of the | British Museum. | By | T. Salvadori. | London: | Printed by order of the Trustees. | Sold by | Longmans & Co., 39 Paternoster Row | . . . [= 4 lines, names of booksellers] | 1893.—8vo, pp. i-xvii, 1-676, pl. i-xv. = Catalogue of the Birds in the British Museum, Vol. XXI.

riguez. The Columbæ proper, or the existing Pigeons, are separated into five families, namely: (1) Treronidæ, (2) Columbidæ, (3) Peristeridæ, (4) Gouridæ, (5) Didunculidæ. Only the Columbidæ and Peristeridæ are represented in the New World. The Treronidæ, or Tree Pigeons, are separated into three subfamilies and 19 genera, and number about 190 species, 75 of which are referred to the genus *Ptilopodus* and 43 to the genus *Carpophaga*. The Columbinæ, mainly restricted to the Old World, number 100 species, of which more than half are referred to the single genus *Columba*. The Peristeridæ embraces seven subfamilies, 36 genera, and some 250 species, only about 70 of which are American and the rest, as well as the Gouridæ (6 species) and the Didunculidæ (1 species), belonging to the Old World.

Prof. Salvadori appears to have done his work with great care and thoroughness, and has thus placed all ornithologists under a deep debt of gratitude. In matters of nomenclature he of course takes some liberties, or at least what would be so considered on this side of the water (*cf.* Auk, IX, p. 278, 279). It is hardly consistent, however, for him to accept *Turtur turtur* (ex *Columba turtur* Linn.) on p. 396 while he rejects *Zenaida zenaida* (ex *Columba zenaida* Bon.) on p. 382. We of course would not expect him to permit *Columbigallina*, "a long, badly constructed name," to supersede *Chamæpelia*, though having eleven years priority.

For the genus of late currently recognized under the name *Engyptila* he prefers the preoccupied name *Leptoptyla*; but there seems to be a name which should supersede *Engyptila* (Sundevall, 1872); namely, Salvadori's own name *Homoptila* which has a year's priority.¹ This same genus gives rise also to several other much to be lamented changes of nomenclature, since our author finds that *Columba erythrothorax* Temm. and Knip, said to be from Surinam, is in all probability an African species identical with *Aploptilia larvata* (Bon. ex Temm. and Knip). At all events, it "cannot be identified with any of the known species of the genus *Leptoptyla*," and hence the South American bird so long known as *Leptoptyla erythrothorax* becomes *Homoptila reichenbachi* (Pelz.). Another case, affecting a North American species, is that of our *Engyptila albifrons* (Bon.), Prof. Salvadori finding that the type of *L. albifrons* Bon., in the Paris Museum, "is undoubtedly a specimen of *L. jamaicensis*." Hence another name becomes necessary for the species so long and almost exclusively known as *Leptoptyla* (or *Engyptila*) *albifrons*, and Salvadori takes for it *brachyptera* Gray, a *nomen nudum*, used by Gray in 1856 for Mexican specimens of this species, still extant in the British Museum. Hence the name for our

¹ *Homoptila* Salvad. Atti. R. Ac. Sci. Tor. VI, 1871, p. 131. Type *Homoptila decipiens* Salvad., l. c. = *Leptoptyla ochroptera* Pelzeln, 1870.

Engyptila Sundevall, Meth. nat. Av. disp. Tent. 1872, p. 156 = *Leptoptyla* Swain. (preoccupied), type, *Columba rufaxilla* Rich. and Bern.

White-fronted Pigeon now becomes *Homoptila brachyptera* (Salvad.).¹ The name *brachyptera* must of course date from Salvadori, 1893, the name being then for the first time properly established.

There is, however, among the alleged synonyms of *brachyptera* a still earlier name, to wit, *Leptoptila fulviventris* Lawrence, 1882, which Salvadori, after an examination of the type, places here. He remarks, however, "Some Yucatan specimens (*L. fulviventris* Lawr.) are more fulvous on the flanks, and, perhaps, less bright on the hind neck; generally they have the forehead more vinous, but some specimens from other localities match them in this respect." An examination of the type and several other Yucatan specimens labelled by Mr. Lawrence as *L. fulviventris*, in the collection of the American Museum of Natural History, however, seems to render their reference here extremely doubtful, they differing greatly from a large series of Texas and Mexican specimens of '*albifrons*,' apparently much more nearly agreeing with *Homoptila verreauxi* (Bon.), especially in the large amount of rufous on the inner web of the quills. It hence seems much safer to take the name *brachyptera* for the northern bird, usually heretofore known as *albifrons*. Probably a number of the forms in this genus ranked by Salvadori as species will eventually be found to be entitled to recognition merely as subspecies or geographical forms.—J. A. A.

Elliot's Monograph of the Pittidæ.²—'A Monograph of the Pittidæ,' published in 1863, was the first of the long series of finely illustrated monographs for which ornithologists are so deeply indebted to Mr. D. G. Elliot. In the interval of thirty years that has elapsed since its first appearance our knowledge of the group has greatly increased, many species in the meantime having been described, and the habits and relationships of the others have become better known. It is therefore peculiarly fitting that the group should be again monographed by the same hand. This "second edition, revised and enlarged," is practically a new work, not only much new matter being added, but the whole is rewritten, and the nomenclature much altered. The work is to form five parts, each part to contain ten plates; the new plates being drawn by Mr. W. Hart, while the old ones are by the author. The species figured in Part I are *Eucichla gurneyi*, *E. schwaneri*, *Pitta moluccensis*, *P. maxima*, *P. venusta*, *P.*

¹ *Peristera brachyptera* G. R. Gray, List Bds. Brit. Mus., Columbæ, 1856, p. 54 (nomen nudum).

Leptoptila brachyptera Salvad., Cat. Bds. Brit. Mus. XXI, 1893, p. 545.

Homoptila brachyptera Allen, MS.

² *Leptoptila albifrons* Sclater (nec Bon.) P. Z. S., 1857, p. 214, and of most subsequent writers.

A Monograph of the Pittidæ, or Family of Ant-Thrushes. By D. G. Elliot, F. R. S. E., etc. Second Edition, revised and enlarged. Part I. London: Bernard Quaritch, 15 Piccadilly, W. April, 1893. Folio, 10 colored Plates and text.

rosenbergi, *P. oatesi*, *P. angolensis*, *P. arcuata*, and *P. sordida*. One of these (*P. oatesi*) appears not to have been before figured, and three others are not included in the first edition of the 'Monograph.'

The changes in nomenclature that may be expected in the present as compared with the former edition have been foreshadowed in Mr. Elliot's recent article 'On the Genus *Pitta* Vieillot' (Auk, X, 1893, pp. 51, 52) and in remarks apropos of Dr. Stejneger's paper on the same subject (l. c., pp. 184, 185). It is therefore not a surprise that he should follow the A. O. U. Code respecting the rule of priority and adopt the earliest specific name in the case of *Pitta moluccensis* and *P. sordida* in the place of later-given though more current names favored by some other recent writers on the group. We regret to note, however, that he lapses in consistency in accepting the amended form *arcuatus* for Gould's earlier though less fortunate *arquatus*.

Few groups of birds present greater beauty of plumage than the Pittidæ or Ant-Thrushes, or offer greater opportunities for the skill of the artist in illustration, and in the present instance the plates give ample testimony of their ability.—J. A. A.

Sharpe on the Zoögeographical Areas of the World.¹— In the August number of 'Natural Science,' Dr. Sharpe has given a summary of his views on the different regions, subregions, etc., of the world as illustrated in his recent course of lectures on the 'Geographical Distribution of Birds' delivered at the Royal Institution. In his introductory remarks he laments the "want of zoological statistics for vast tracts of the Old World," and congratulates American naturalists on "the success which has resulted from their patient collection of materials, which leaves them in the proud position of having better statistics to work upon than are possessed by the ornithologists of any other portion of the globe," with the exception, perhaps, of those of the British Islands.

Dr. Sharpe says: "Some of Mr. Allen's conclusions ('Auk,' 1893, pp. 97-150) with regard to the main divisions of the Old World are the same as those of Dr. Reichenow, and I think that they are, in both instances, too sweeping; but the recognition and definition of an Arctic Zone, or 'Realm,' as Mr. Allen calls it, is a fact which must henceforward be admitted by all ornithologists." After this last admission it is somewhat disappointing to find him still partitioning the northern portion of the northern hemisphere into two primary areas, under the very familiar names of 'Nearctic Region' and 'Palæartic Region.' This inconsistency, however, he accounts for as follows: In giving reasons for not adopting "Mr. Allen's nomenclature in its entirety," he says: "I may in due time be brought to speak of 'Realms,' but the same conservatism which prevents my adopting

¹ On the Zoo-geographical Areas of the World, illustrating the Distribution of Birds. By R. Bowdler Sharpe, LL. D., F. L. S. Natural Science, Vol. III, No. 18, pp. 100-108. Aug., 1893. With Maps.

the trinomial nomenclature of the American zoologists of the present day will prevent my discarding some of the old-fashioned, and, to me, expressive zoo-geographical terms. I cannot understand why the word 'Nearctic' should be discarded."

In the present brief paper (for so extensive a subject) our author does not attempt to characterize his various areas by specifying their distinctive ornithic elements, but he in a general way defines the boundaries of his regions, and enumerates their principal subdivisions. His primary divisions or 'Regions' are six in number, as follows: A, Nearctic; B, Neotropical; C, Palæarctic; D, Ethiopian; E, Indian; F, Australian. For the New World he thus adopts "the old divisions of the Nearctic and Neotropical Regions." The Nearctic he subdivides as follows:—

- I. Arctic Subregion.
- II. Alaskan Arctic Subregion.
- III. Aleutian Subregion.
- IV. Cold Temperate Subregion.
- V. Warm Temperate Subregion.
 - 1. Humid Province.
 - a. Appalachian Subprovince.
 - b. Austroriparian Subprovince.
 - 2. Arid Province.
 - y. Campestrian Subprovince.
 - s. Sonora Subprovince.

These areas are practically the same as those designated by similar names by the present writer, except that I, II, and III differ in grade and allocation, ranking here as divisions of the second grade instead of divisions of the very lowest grade, or below subprovinces. The incongruity of his classification of the Arctic portion of the northern hemisphere is further brought out under "C.—The Palæarctic Region," where he says: "This may be divided roughly into three subregions, besides the *Arctic Zone*, which corresponds with the same zone in the New World, and becomes a circumpolar province." In other words, a "circumpolar province" is subdivided into four "subregions," which are apportioned between two "regions."

As regards the 'Neotropical Region,' or the "Southern Region of the New World," it is divided into subregions and provinces much as has been done by previous writers. The 'Palæarctic Region' is divided into a 'Eurasian Subregion' and a 'Mediterranean-Asiatic Subregion'; "the one answering to Mr. Allen's 'Cold Temperate Subregion,' and the other to his 'Warm Temperate Subregion.'" Each of these is divided into three 'Provinces.' The Palæarctic is further subdivided into "III, Mantchurian Subregion," and "IV, the Himalo-Caucasian Subregion," the latter also with three provinces.

The Ethiopian Region is divided into eight 'Subregions,' one, the South African, having two Provinces. This classification is to a large extent

new, being even considerably modified from that proposed by the same writer in 1870.

The Indian Region is divided into five subregions, and the Australian into seven; but they are given simply in a tabular enumeration without attempt at definition beyond that implied in the names given them. The accompanying maps, however, serve to define them, and also all of the other zoögeographical areas mentioned in the accompanying text.

The paper as a whole gives evidence of hasty preparation, and is quite too brief for a satisfactory presentation of the subject, the treatment being merely in outline. We trust that Dr. Sharpe will soon find time to return to this interesting subject, to which he has evidently given so much attention, and present his views in greater detail, backed by fuller statistical information as to the distinctive elements of the several areas here outlined. For the most part his scheme seems reasonable, the chief blemish being in his treatment of the Arctic and Cold Temperate portions of the northern hemisphere, which is much less satisfactory than Prof. Newton's allocation of this whole area as a single 'Holarctic Region' (*cf. antea*, p. 59). —J. A. A.

Apgar's Pocket Key of Birds.¹—A manual of North American birds compact enough and cheap enough to accommodate itself to every one's pocket, one by which even the most inexperienced can identify a bird in the hand, will be widely welcomed. Indeed it is hard to conceive of a more useful book—or one more difficult to prepare. It is not so very hard, with unlimited space and a free use of technical terms, to write descriptions by which an ornithologist of some experience can identify birds he already more than half knows; but diagnoses that shall be concise and sufficient, untechnical and clear, that shall make obscure plumages easy for the tyro to recognize, are by no means a simple matter. Yet this is exactly what is needed.

The present volume begins with a 'Key to the Families,' and then each family, from the Thrushes to the Grebes, is treated in turn. First comes a key to its genera (and sometimes to convenient subdivisions of the larger genera), then under each a statement of characters by which the species it contains may be distinguished. These specific diagnoses are very brief, averaging only eight or ten words apiece. For many species, those whose characters are well marked and constant, this is enough. In more difficult cases it would not be surprising if the student were to agree with the author, that "after the supposed name is determined, it would be well to read a full description in such works as those of Dr. Jordan, Dr. Coues, or Mr. Ridgway, to verify the determination." When a writer takes such a modest view of the purposes of his book, it is hard to

¹ Pocket Key | of the | Birds | of the | Northern United States, | east of the Rocky Mountains. | — | By | Austin C. Apgar, | Author of "Trees of the Northern United States," "Mollusks of the | Atlantic Coast," &c. | — | Trenton, N. J. | The John L. Murphy Pub. Co., Printers. | 1893. | 16,° pp. 63 [= 61].

censure him for lightening his task, as he has done, by ignoring subspecies,¹ and often, too, by giving descriptions only sufficient to identify the adult males. Here, alas, he has but followed in the footsteps of leading ornithologists, and he can hardly be blamed for taking them as models rather than as warnings.—C. F. B.

Allen's Notice of some Venezuelan Birds, collected by Mrs. H. H. Smith.²—Although based on a small collection of about 60 specimens, this paper shows what may yet be done in comparatively well worked areas of South America, three of the forty-eight species being new to science, two others present differences which will probably be found constant when additional specimens are examined, while the identification of two others is merely provisional.

The new forms described are *Ramphocelus atrosericeus capitalis*, *Lophotriccus subcristatus*, and *Picumnus obsoletus*—all from El Pilar, “a little way in the interior” of the country.

A species which, if correctly identified, has its known range much extended is *Hapalocercus fulviceps* (Scl.), previously recorded only from western Ecuador and Peru.

We regret to see, in the spelling of the generic name *Ramphocelus* (instead of *Ramphoculus*), on p. 51, a disregard—doubtless accidental—of one of the rules of nomenclature of the American Ornithologists' Union (Canon XL).—R. R.

Allen's List of Birds collected in Northeastern Sonora and Northwestern Chihuahua.³—This is a list of 162 species, based on a collection of about one thousand specimens, made chiefly by Mr. Frank Robinette, of Washington, D. C. Although the localities represented are 150 miles or more from the southern boundary of Arizona, all but ten of the 162 species have been taken within our limits. These peculiarly Mexican forms are the following: “*Callipepla elegans*” (= *C. e. bennoni* Ridgw.⁴), *Rhynchositta pachyrhyncha*, *Euptilotis neoxenus*, *Campephilus imperialis*, “*Myiarchus inquietus* Salv. and Godm.”⁵ *Aimophila superciliosa*,

¹This is doubly unfortunate, for it results in the introduction of misleading names—for instance, *Turdus aonalaschkei*, *Ammodramus sandwichensis*, and *Empidonax pusillus* for the Hermit Thrush, Savanna Sparrow, and Traill's Flycatcher.

²Notice of some Venezuelan Birds, collected by Mrs. H. H. Smith. By J. A. Allen. Bull. Am. Mus. Nat. Hist., Vol. IV, No. 1, Article V, April 6, 1892, pp. 51-56.

³List of Mammals and Birds collected in Northeastern Sonora and Northwestern Chihuahua, Mexico, on the Lumholtz Archaeological Expedition, 1890-92. By J. A. Allen. Bull. Am. Mus. Nat. Hist., Vol. V, Art. 3, March 16, 1893, pp. 27-42.

⁴Forest and Stream, XXVIII, No. 6, 1887, p. 106; Proc. U. S. Nat. Mus., X, July 2, 1887, 148-150.

⁵Identification open to question.

A. mcleodi, *Peuæa notosticta*, *Melospiza fasciata mexicana*, *Geothlypis trichas melanops* and *Basileuterus rufifrons*.

The names of the North American species are unaccompanied by the authorities, but the latter are given in the case of ten species extra-limital to the A. O. U. Check-List, always, however, in parentheses, which are required in only five of them. This typographical blemish does not, however, detract from the value of the paper, except in so far as it wrongly represents the nomenclature of the species affected.

There are two or three identifications, in addition to that of the supposed *Myiardius inquietus*, we believe will bear reconsideration, as for example, *Melospiza fasciata mexicana* and *Geothlypis trichas melanops*, which certainly seem out of place in the list.—R. R.

Chapman's Notes on Birds observed near Trinidad, Cuba.¹—This carefully prepared and highly interesting paper is worthy of more extended review than can be given it at present. The introductory portion consists of a pleasing description of the localities visited. Then follow 'Notes on Cuban Birds' arranged under the separate headings of 'General Impressions of Cuban Bird-life,' 'The Migration,' 'Birds observed while sailing from Batabanó to Trinidad,' 'The Cuban Avifauna,' and 'Species Described as New or Added to the Cuban Fauna.' The 'Annotated List of Birds Observed' includes 99 species, of which *Rallus longirostris cubanus* is described as new on page 288.

In connection with certain Cuban species the representative forms of other islands are discussed, and in some cases separated, for example the Jamaican representative of *Pitangus caudifasciatus*, which is named *P. jamaicensis* (p. 303) and the Bahaman representative of *Dendroica petechia gundlachi*, which is named *D. p. flaviceps* (p. 310). A new genus, *Ptiloxena*, is instituted for the so-called "Scolecophagus" *atrovioletaceus*, a procedure both justifiable and timely.

The critical remarks and biographical notes embodied in this paper are of excellent quality, and the paper as a whole one of first-class merit.—R. R.

Minor Ornithological Publications.—'Forest and Stream.' This journal was last noticed in Vol. IX, pp. 384-387. In Vols. XXXIX and XL (July, 1892-June, 1893) are the following (Nos. 2611-2697).

2611. *Bonasa umbellus*, *Rex*. By Dr. Robert T. Morris. 'Forest and Stream,' Vol. XXXIX, No. 1, July 7, pp. 6-7.—A biographical sketch.

2612. *Rare Birds' Nests*. By H. Austen. *Ibid.*, No. 2, July 14, 1892, p. 28.—*Regulus calendula*.

2613. *A Bit of Grouse Hunter's Lore*. By Dr. Robert T. Morris. *Ibid.*, No 3, July 21, 1892, p. 49.—*Bonasa umbellus*.

¹ Notes on Birds and Mammals observed near Trinidad, Cuba, with remarks on the Origin of West Indian Bird-Life. By Frank M. Chapman. Bull. Am. Mus. Nat. Hist., Vol. IV, Art. XVI, Dec. 29, 1892, pp. 279-330.

[‘Forest and Stream.’—Continued.]

2614. *Stocking Massachusetts Covers.* By John Fottler, Jr., Edward E. Hardy, Henry J. Thayer, Edward Brooks, and Outram Bangs. *Ibid.*, No. 4, July 28, 1892, p. 70.—*Cupidonia cupido*, *Pediocetes phasianellus columbianus*, *Colinus virginianus*, *Oreortyx pictus*, *Callipepla gambeli*.
2615. *Notes on the Sandhill Crane.* By Orin Belknap. *Ibid.*, No. 5, Aug. 4, 1892, p. 91.
2616. *Bird Life in a City Yard.* By Morris Gibbs. *Ibid.*, No. 6, Aug. 11, 1892, p. 114.—Kalamazoo, Michigan.
2617. *Photographing a Nesting Woodcock.* By G. Hills. *Ibid.*, No. 7, Aug. 18, 1892, p. 135.
2618. *A Habit of the Robin.* By N. D. Elting. *Ibid.*, No. 9, Sept. 1, 1892, p. 179.
2619. *Migrating Martens.* By B. *Ibid.*—*Progne subis* at Bucksport, Maine.
2620. “*Life Histories of N. A. Birds.*” *Ibid.*, No. 11, Sept. 15, 1892, pp. 222–223.—Review of Capt. C. E. Bendire’s book.
2621. *The Strange Adventure of a Gull.* By P. *Ibid.*, No. 13, Sept. 29, 1892, p. 267.—*Larus argentatus smithsonianus* caught by a quahaug.
2622. *Days with the Upland Plover.* By T. S. Van Dyke. *Ibid.*, No. 14, Oct. 6, 1892, p. 292.
2623. *Bird Notes from Missouri.* By Jasper Blines. *Ibid.*, p. 294.
2624. *Game Birds for Massachusetts.* By Henry J. Thayer. *Ibid.*—*Callipepla gambeli*, *Tympanuchus americanus*, *Pediocetes phasianellus columbianus*.
2625. *Migration of Hawks.* By Wilmot Townsend. *Ibid.*, No. 15 Oct. 13, 1892, p. 311.
2626. *Land Birds at Sea.* By H. *Ibid.*
2627. *A Habit of the Robin.* By Morris Gibbs, M. D. *Ibid.*, No. 16, Oct. 20, 1892, p. 333.
2628. *A Prairie Chicken Migration.* By D. D. Banta. *Ibid.*, No. 21, Nov. 24, 1892, p. 443.
2629. *Eggs killed by Heat.* By West Virginian. *Ibid.*—*Colinus virginianus*.
2630. *American Ornithologists’ Union.* *Ibid.*, p. 444.—Report of Tenth Congress.
2631. *Recollections of Golden Plover.* By T. S. Van Dyke. *Ibid.*, p. 445.
2632. *Eggs killed by Heat.* By H. S. *Ibid.*, No. 23, Dec. 8, 1892, p. 488.—*Colinus virginianus*.
2633. *Grouse in Confinement.* From the ‘Chenango (N. Y.) Union.’ *Ibid.*, p. 489.—*Bonasa umbellus*.
2634. *Vermont Quail.* By John W. Titcomb. *Ibid.*, No. 24, Dec. 15, 1892, p. 513. *Colinus virginianus* introduced at certain places.
2635. *Those Vermont Quail.* By W. C. Witherbee. *Ibid.*, No. 25, Dec. 22, 1892, p. 536.

['Forest and Stream,'—Continued.]

2636. *Familiar Acquaintances.* *The Ruffed Grouse.* Editorial. *Ibid.*, Vol. XL, No. 2, Jan. 12, 1893, p. 23.
2637. *Snowy Owls.* By J. L. Davison. *Ibid.*, No. 3, Jan. 19, 1893, p. 47.
2638. *Blue Goose in Rhode Island.* By F. L. Glezen. *Ibid.*, p. 48.
2639. *Cold Weather Notes.* By Alfred A. Frazer. *Ibid.*, No. 4, Jan. 26, 1893, p. 71.—*Colinus virginianus*.
2640. *Georgia Woodcock.* By Jersey. *Ibid.*
2641. *A South Carolina Woodcock Flight.* By J. U. Gregory. *Ibid.*, p. 74.
2642. *The "Ocean Sheldrake" a Goosander.* Editorial. *Ibid.*, No. 5, Feb. 2, 1893, p. 93.
2643. *Eider Shooting on the Maine Coast.* By W. S. J. *Ibid.*, p. 96.—Notes on *Somateria dresseri*, *S. spectabilis* and *Histrionicus histrionicus*.
2644. *Pine Grosbeaks.* By William Brewster. *Ibid.*, No. 6, Feb. 9, 1893, p. 115.
2645. *Pinnated Grouse in Western Massachusetts.* *Ibid.*, No. 7, Feb. 16, 1893, p. 135.
2646. *The Pine Grosbeak.* By J. G. Rich. *Ibid.*, No. 8, Feb. 23, 1893, p. 157.
2647. *An Eagle in a Trap.* By Jagare. *Ibid.*, No. 9, March 2, 1893, p. 179.—*Aquila chrysaetos*.
2648. *A Wise Loon.* By E. H. C[lark]. *Ibid.*, p. 180.—*Urinator imber*.
2649. *Sierra Bird Notes.* By Arefar. *Ibid.*, No. 10, March 9, 1893, p. 205.—*Spinus tristis*, *S. psaltria*, *Sialia arctica*, *Mimus polyglottos*, *Cinclus mexicanus*.
2650. *How it is Going.* By W. W. *Ibid.*, p. 209.—*Meleagris gallopavo* at Chatham, Ontario.
2651. *Curious Fatality among Crows.* By M. G. Ellzey, M. D. *Ibid.*, No. 11, March 16, 1893, p. 228.
2652. *The Cuckoo.* By J. G. R[ich]. *Ibid.*—*Coccyzus erythrophthalmus* at Bethel, Maine.
2653. *Bird Chat.* By Wilmot Townsend. *Ibid.*, No. 12, March 23, 1893, p. 248.—On *Troglodytes aëdon*, *Spizella socialis*, *Bonasa umbellus*, *Tympanuchus americanus*, *Turdus mustelinus*, *Harporkynchus rufus*, and others.
2654. *Notes on the Pine Grosbeak.* By Hermit and A. P. F. Coape. *Ibid.*, p. 250.
2655. *The Heath Hen—Where?* By Wm. Dutcher and the editor. *Ibid.*
2656. *Bald Eagle and Golden.* By Wm. Dutcher. *Ibid.*
2657. *The Woodcock have Come to Town.* By Subscriber and W. Alex. Bass, Jr. *Ibid.*, No. 13, March 30, 1893, p. 271.
2658. *Woodcock in Town.* *Ibid.*, No. 14, April 6, 1893, p. 294.—Note on the Woodcock's whistling.

['Forest and Stream.'—Continued.]

2659. *Moultting of Ducks*. By Fred. Mather. *Ibid.*
2660. *The Mongolian Pheasant*. By Thomas G. Farrell. *Ibid.*, p. 297.—Habits in Oregon.
2661. *Chukor Partridges in Illinois*. By W. O. Blaisdell. *Ibid.*, No. 15, April 13, 1893, p. 317.—*Caccabis chucor*.
2662. *The Wiping Out of the Wild Pigeon*. By M. *Ibid.*, p. 318.
2663. *Song of the Western Meadow Lark*. By J. W. A. *Ibid.*, No. 16, April 20, 1893, p. 337.
2664. *Pine Grosbeak in Minnesota*. By One of the Unreliables. *Ibid.*
2665. *Michigan Bird Arrivals*. By B. Swales. *Ibid.*—At Detroit.
2666. *Acquired Habits of California Quail*. *Ibid.*, p. 338.
2667. *Mongolian Pheasants are Good Swimmers*. By N. Wallace. *Ibid.*—Introduced at Farmington, Conn.
2668. *Maine's Vanishing Game*. By Tom Ford. *Ibid.*, No. 17, April 27, 1893, p. 359.—Notes on *Ectopistes migratorius*, *Quiscalus q. aeneus*, et al.
2669. *Audubon Monument Ceremonies*. *Ibid.*, pp. 360–361.—Some biographical matter concerning J. J. Audubon.
2670. *Yellow-breasted Chat*. By George Boudwin. *Ibid.*, No. 18, May 4, 1893, p. 381.—Habits in Pennsylvania.
2671. *Cuckoo or Raincrow*. By N. A. T. *Ibid.*, p. 382.—*Coccyzus americanus* (?) in Texas.
2672. *Bewildered Migrants*. By Mrs. Mary L. Rame. *Ibid.*—At Manchester, Iowa.
2673. *Bobolinks have Come*. By M. C. H. *Ibid.*—At Cortland, N. Y.
2674. *North Dakota Game*. By Elmer T. Judd. *Ibid.*—Additions to a list of "game" birds of Towner Co., N. D. See Auk, IX, 69, No. 2181.
2675. *Eastern Maine Notes*. By Tom Ford. *Ibid.*—*Branta canadensis* and *Bonasa u. togata* near Bangor.
2676. *Oregon Pheasants and Quail*. By S. H. Greene. *Ibid.*, p. 385.
2677. *Capercailzie for America*. *Ibid.*, No. 19, May 11, 1893, p. 401.—See No. 2688.
2678. *Spring Notes*. By Stanstead and B. H. S. *Ibid.*, p. 403.—Contains notes on *Ectopistes migratorius* near Highgate, Va., and on various species at Detroit, Mich.
2679. *The Woodcock's Ways*. By H. S. *Ibid.*, pp. 403–404.
2680. *The Pheasant's Worth*. By J. A. Beebee, M. D. *Ibid.*, p. 404.—*Phasianus torquatus*, *P. pictus*, *P. nycthemerus*.
2681. *Notable Shots*. By Old Avalanche. *Ibid.*, p. 406.—*Botaurus lentiginosus*.
2682. *Some Feathered Scalawags*. By Didymus. *Ibid.*, No. 20, May 18, 1893, p. 425.—*Lanius ludovicianus* and *Cyanocitta cristata florincola*.
2683. *A Wearied Migrant*. By Twelve-Bore. *Ibid.*—*Seiurus aurocapillus* in a Boston backyard.
2684. *Description of a New Prairie Hen*. By Chas. E. Bendire. *Ibid.* *Tympanuchus attwateri*.

[‘Forest and Stream.’—Continued.]

2685. *Quail in Northern New York*. By W. C. W. *Ibid.*, p. 427.
2686. *Massachusetts Quail*. By Special. *Ibid.*
2687. *Vermont Deer, Pheasant and Quail*. By Wheelock. *Ibid.*
2688. *The End of the Capercaillie*. By L. *Ibid.*—See No. 2677.
2689. *A Robin’s Farm Bell Nest*. *Ibid.*, No. 21, May 25, 1893, p. 446.
2690. *Breeding Ruffed Grouse*. By Jay Beebe. *Ibid.*, p. 448.—In captivity.
2691. *Nehrling’s ‘North American Birds’*. *Ibid.*—Notice of the book.
2692. *Jaguar, Owl and Skunk*. By N. A. T. *Ibid.*, No. 22, June 1, 1893, p. 470.—Correcting No. 2671.
2693. *A Habit of the Robin*. By J. M. English. *Ibid.*, p. 471.
2694. *That Habit of the Robin*. By N. D. Elting. *Ibid.*, No. 24, June 15, 1893, p. 513.
2695. *Hawk Migration*. By Karl V. S. Howland. *Ibid.*—At Montclair, N. J.
2696. *The Owl’s Antics*. By J. W. S. *Ibid.*, No. 25, June 22, 1893, p. 539.—*Asio accipitrinus* (?).
2697. *Hawk Migration*. By Nims. *Ibid.*, No. 26, June 29, 1893, p. 561.—At Baldwinsville, Mass.—C. F. B.

Publications Received.—Anthony, A. W. Birds of San Pedro Martir, Lower California. (*Zoe*, IV, 1893, pp. 228–247.)

Apgar, Austin C. Pocket Key of the Birds of the Eastern United States, east of the Rocky Mountains. 12mo. pp. 63, 1893. Trenton, N. J.

Büttikofer, J. (1) On two New Species of *Pachycephala* from South Celebes. (*Notes from the Leyden Museum*, XV, 1893, pp. 167, 168.) (2) On two New Species of the genus *Stoparola* from Celebes. (*Ibid.*, pp. 169–170.) (3) On a New Species of the genus *Gerygone* from Borneo. (*Ibid.*, pp. 174–176.) (4) On two New Species of Birds from South Celebes. (*Ibid.*, pp. 179–181.) (5) On two New Species of the genus *Gerygone*. (*Ibid.*, pp. 258–259.) (6) On two New Species of Birds from Java and Celebes. (*Ibid.*, pp. 260–261.)

Meyer, A. B. On the Egg of the Empress Augusta-Victoria’s Paradise-bird. (*Ibis*, Oct. 1893, pp. 481–483, pl. xiii.)

Ragsdale, G. H. Title of [his] Papers Published on Many Subjects. (*The Daily Hesperian*, Gainesville, Texas, Oct. 15, 1893.)

Reichenow, Ant. Die Vogelfauna der Umgegend von Bismarkburg. (Mittheil. aus den deutschen Schutzgebieten, VI, 1893.)

Richmond, C. W. On a Collection of Birds from Eastern Nicaragua and Rio Frio, Costa Rica, with Notes; and a Description of a supposed New Tropic. (*Proc. U. S. Nat. Mus.* XVI, pp. 479–532.)

Ridgway, R. (1) Remarks on the Avian Genus *Myiarchus*, with special reference to *M. yucatanensis* Lawrence. (*Proc. U. S. Nat. Mus.* XVI, pp. 605–608). (2) On a small Collection of Birds from Costa Rica. (*Ibid.*, pp. 609–614.) (3) Catalogue of a Collection of Birds made in

Alaska by Mr. C. H. Townsend during the Cruise of the U. S. Fish Commission Steamer *Albatross*, in the Summer and Autumn of 1888. (*Ibid.*, pp. 663-665.) (4) Description of a New Storm Petrel from the Coast of Western Mexico. (*Ibid.*, pp. 687, 688.) (5) A Revision of the Genus *Formicarius* Boddaert. (*Ibid.*, pp. 667-686.)

Slater, P. L. Chairman's Address on opening the Second Session of the British Ornithologists' Club.

Short, Ernest H. Birds of Western New York, with Notes. 8vo, pp. 13. Chili, New York, 1893.

Shufeldt, R. W. (1) On the Mechanism of the Upper Mandible in the Scolopacidae. (*Ibis*, Oct. 1893, pp. 563-565.) (2) Some Recent Economic Questions in Ornithology. (*Science*, XXII, pp. 255, 256.) (3) Audubon the Naturalist. (*The Great Divide*, Sept. 1893.) (4) Short Studies of some of our Owls. (*Ibid.*, Nov. 1893.)

Stejneger, L. Notes on a Third Instalment of Japanese Birds in the Science College Museum, Tokyo, Japan, with Descriptions of New Species. (*Proc. U. S. Nat. Mus.* XVI, pp. 615-638.)

American Journ. Sci., Oct.-Dec., 1893.

American Naturalist, Oct.-Dec., 1893.

Annals of Scottish Natural History, Oct. 1893.

Australian Museum, Records of, II, No. 5, Sept., 1893.

Bulletin British Ornithologist's Club, Nos. 11 and 12, 1893.

Canadian Record of Science, V, No. 7, July, 1893.

Forest and Stream, XLI, Nos. 13-26, 1893.

Journal of the Cincinnati Soc. Nat. Hist., XVI, Nos. 2 and 3, 1893.

Naturalist, Month. Journ. Nat. Hist. for North of England, Nos. 219-221, Oct.-Dec., 1893.

Nidiologist, I, Nos. 3 and 4, 1893.

Observer, IV, Nos. 10-12, Oct.-Dec., 1893.

Ornithologische Jahrbuch, IV, Heft. 5, 1893.

Ornithologische Monatsberichte, I, Nos. 10-12, Oct.-Dec., 1893.

Ottawa Naturalist, VII, Nos. 7-9, Oct.-Dec., 1893.

Proceedings Acad. Nat. Sci. Phila., 1893, pt. 2, Apr.-Sept.

Shooting and Fishing, XIV, Nos. 20-26, XV, Nos. 1-15, 1893.

Transactions Wisconsin Acad. Sciences, Arts and Letters, IX; pt. 1, 1892-93.

Zoe, IV, No. 3, Oct. 1893.

Zoölogist, Oct.-Dec., 1893.

GENERAL NOTES.

The Parasitic Jaeger at Bellingham Bay, Washington. — October 28, 1893, I shot, on Bellingham Bay, a Parasitic Jaeger, *Stercorarius parasiticus*, which species, I believe, has not heretofore been reported from this quarter of the Union, or at least from this State. The mounted skin of this specimen is now in my possession. The phase of plumage which it represents may, perhaps, be understood from the following description: Above chiefly dusky, darker on primaries, rectrices and crown, the hind neck paler, the sooty-brown feathers of interscapulars interspersed with feathers which are black broadly tipped with white; black and white bars extend around lower neck and across chest in a broad band; sides coarsely barred with black and white; both under and upper tail coverts contain plain dusky feathers mingled with feathers barred with black and buffish white; belly, throat and chin white; sides of neck whitish finely specked with dusky; small patch of pale buff at extremity of forehead; tarsi and feet black; nasal shield leaden blue. Length, 20 inches; wing, 13; longest tail feathers, 8.50. When killed, the bird, with another of presumably the same species, was vigorously chasing a Bonaparte's Gull. Its companion, which escaped capture, appeared to be of a nearly uniform sooty brown above and below, rather lighter than the upper parts of the one taken. — JOHN M. EDSON, *New Whatcom, Washington.*

Further News of the Gull 'Dick.'—As the migratory movement of a certain American Herring Gull (*Larus argentatus smithsonianus*) called 'Dick' (see Auk, Vol. IX, p. 227, and Vol. X, p. 76) for the year 1893 may be of interest to some of the readers of 'The Auk,' I quote from two letters received, in answer to my enquiries, from Capt. Edward Fogarty of the Brenton Reef Light-ship, stationed off Newport, Rhode Island. The first of these was dated April 10, 1893, and states that the last seen of 'Dick' was on the evening of the 7th inst., just before sundown, at which time the bird received its supper. It would seem that 'Dick' inclined to have company during migration this season, for he brought another Gull with him to jointly partake of the supper provided. When the ship's lights were hoisted for the night both birds departed in company, and no more was seen of them. The second letter was dated October 7, 1893, and informs me that on this date at one o'clock P. M., 'Dick' again appeared at the light-ship for the first time since his departure. In appearance he was ragged and torn and minus tail feathers. He had a voracious appetite, eating as much as a hungry dog. It seemed as though he would never get enough to satisfy him. His arrival in 1892 was on September 28, at five o'clock P. M.—GEO. H. MACKAY, *Nantucket, Mass.*

The Black Tern at Washington, D. C. — September 18, 1893, I shot thirteen Black Terns. Previous to this I am aware of only one recorded instance of its occurrence, one being found dead September 18, 1882.—EDWARD J. BROWN, *Washington, D. C.*

Hydrochelidon nigra surinamensis in Connecticut.—On the afternoon of August 29, 1893, after the hard southeast gale of that morning, I found a flock of about forty Black Terns on the Quinnipiack Marshes near here. Possibly this was the same flock that was seen at Milford, Conn., on August 24, during the heavy gale of that date, and reported in 'Forest and Stream' for September 23.—LOUIS B. BISHOP, *New Haven, Conn.*

Olor columbianus in Connecticut.—Thanks to Captain O. N. Brooks, I am enabled to record the capture of a young Whistling Swan at Guilford, Conn., on November 2 or 3, 1893. It was shot off Guilford Harbor by a Mr. Reuben Hill, and, according to Captain Brooks, is the first specimen of this species taken in that vicinity during the last fifty years.—LOUIS B. BISHOP, *New Haven, Conn.*

Note on Rougetius aldabranus.—Since describing this species in the 'Proceedings' of the National Museum, Vol. XVI, No. 953, p. 598, I have discovered that it had already been characterized and named by Dr. Gunther in the 'Annals and Magazine of Natural History,' ser. 5, Vol. III, 1879, p. 164, as *Rallus gularis*, var. *aldabrana*. Fortunately, we both selected the same name for our respective specific and subspecific titles.

A series of specimens collected by Dr. Abbott on the neighboring island of Assumption I had, provisionally, referred to *R. gularis*; but on further investigation I find that it is not only distinct from the Madagascar bird, but that the latter cannot be *R. gularis*, the type of which, from Mauritius, is said by Hartlaub (Die Vögel Madagascars, p. 338) to have the top and sides of the head and neck olive, like the back, whereas these parts in the Madagascar bird are rich chestnut, like the chest. There would thus appear to be four allied but distinct forms of this genus, as follows:—

1. *Rougetius gularis* (Cuv.), Mauritius.
2. *Rougetius bernieri* Bonap., Madagascar.
3. *Rougetius aldabranus* (Gunth.), Aldabra, and
4. *Rougetius abbotti*, sp. nov., Assumption Island.

The last-named is characterized as follows:—

SP. CHAR.—Similar to *R. bernieri* Bonap., but upper parts very much lighter and grayer, black streaks on back narrower, and size less, the wing especially. Differs from *R. aldabranus* in the streaked back and scapulars.

HAB.—Assumption Island.

Type, No. 128,826, U. S. Nat. Mus., Assumption Island, Sept. 18, 1892; Dr. W. L. Abbott.—ROBERT RIDGWAY, *Washington, D. C.*

Phalaropus lobatus—A Correction.—In 'The Auk,' Vol. IV, page 78, I recorded the *Phalaropus lobatus* as having been captured near Hartford. I find on more critical examination, that it is the *Crymophilus fulicarius*.—WILLARD E. TREAT, *East Hartford, Conn.*

The 1893 Migration of Charadrius dominicus and Numenius borealis in Massachusetts.—Nantucket, August 20, 1893. Lowering sky and southeast wind. While driving over the western portion of the island, I saw in the distance eighteen birds which I thought were a flock of American Golden Plovers. I had been advised that such a flock had been seen in that neighborhood on the 18th inst. The wind was light southeast with severe rain in the night from nine o'clock P.M. until two A. M.

August 21. I was out very early; raining hard; wind increasing and backing to northwest at four A. M., reaching a velocity of fifty to sixty miles an hour, the storm being very severe. I remained out until noon, seeing only two Golden Plovers and one Eskimo Curlew, and I shot one of each. These were the first birds shot here this season. This storm extended by actual reports two hundred miles south of Nantucket. It cleared at 10.30 P. M. in the evening with wind nearly west.

August 22. Wind light southwest to west; no birds.

August 23. Wind southeast, threatening; no birds.

August 24. Up at four o'clock A. M. Rain commenced about five o'clock, and lasted until nine o'clock A. M., raining very hard at intervals; velocity of wind about 50 miles an hour. It then cleared, wind remaining east and east by south, still blowing very hard. No birds.

August 26. Clear, good breeze, southwest and west; think it has been foggy at sea. I was out four hours driving over the plover ground but only saw one Golden Plover. I have heard from the islands of Tuckernuck and Muskeget and no birds have been seen.

August 27. Foggy around the islands; light warm southeast wind during the early portion of the day; later south to south by west and very foggy; almost calm; no birds.

August 28. Thick weather all last night; no change of wind. Drove over the ground; no birds; warm.

August 28 and 29. Pleasant weather; full moon at night; wind west. Went all over the ground again but no birds.

August 30 and 31. Clear and pleasant; no birds.

September 1. A number of flocks of Plovers were reported to have been heard passing over the island last night; none stopped. The only Plover here are a flock of thirty-five located in a certain preserved field, and a small flock of twelve; nine of these were shot on Sept. 9. I drove over the western ground on the 9th and 10th of September but did not see any birds.

September 11 and 12. Pleasant weather; drove over the ground but no birds.

September 13. While driving over the western ground saw nine Golden Plovers from the above preserved field; weather calm, wind light south by west and southwest.

From the 13th to the 16th I drove out daily, but saw no birds. On the 16th I saw a flock of four Golden Plovers and shot two of them. They

had the appearance of being new arrivals. Wind strong south by west. In the afternoon a severe squall with rain lasted three hours, then cleared with wind west.

September 17. I drove over the eastern portion of the island but did not see any birds.

September 18. Clear weather, strong west winds; drove over the western part of the island; saw no birds.

September 19. Rainy day, wind south by west and southwest; drove out but saw no birds. At six and a half o'clock P. M. it cleared with wind west.

September 20. Hazy; a smoky southwester. I was all over the western ground, but failed to discover any birds. From this date until October 4, I drove more or less over the best ground, and saw other sportsmen daily, but no birds were noted except on September 24, when a flock of six *young* American Golden Plover were seen towards the west. These were the *first* and *only young* birds noted this season. I made inquiry of two Edgartown (Martha's Vineyard) sportsmen regarding the birds in their locality and was told that only about a dozen scattering Plover and four or five Eskimo Curlew had been taken. They told me that on the 22d of August some Plovers were seen passing high up over the town (Edgartown) but none stopped.

Summary.—The great scarcity of these birds this season is shown when I state that only fourteen Golden Plover and one Eskimo Curlew have been shot on Nantucket, and only a dozen of the former and four or five of the latter at Edgartown, a record unexampled, I think, for twenty years. In considering the reasons for this scarcity of birds the present season, I must account for it theoretically as due in part to the continued fair weather and favorable migrating conditions which prevailed *prior* to the 20th of August, as also to the long *threatening* weather which seemed to precede for several days all the storms which prevailed during the migrating period this season. The birds probably adapted their migratory movements to such conditions. I have remarked of late years that it is to the *sudden local* storms which occur while they are on passage along this coast that their presence nowadays is due, such conditions forcing them to seek shelter temporarily from the inclement weather. —GEORGE H. MACKAY, *Nantucket, Mass.*

The California Vulture in the San Gabriel Range, California.—In the San Gabriel Range, Sept. 25, 1893, I saw and shot at a California Vulture. When I first saw the Vulture it was about 350 feet away, across a gulch, perched on a fir stub about 40 feet from the ground. Mr. F. Hawley of Los Angeles was with me. The bird had heard us talking, and heard us shoot, but did not fly. I walked up to within 15 or 20 yards before it decided to leave. I then fired. At the report it pitched off the perch and down into a narrow, crooked cañon below, the large white triangular area under the wings showing plainly as the wings were spread. We searched

an hour in the dense chapparal below, but found nothing. Probably, the shot being small, it was but slightly hurt. Neither of us had ever seen this species before in the wild state, although Mr. Hawley is a native of Southern California and has been often in these mountains.

In this connection I beg to correct a mistake in my note on *Fregata aquila*, published in 'The Auk' for October, 1893 (p. 362). In my reference to the Humboldt Bay specimen, I should have quoted Mr. T. S. Palmer instead of Mr. Anthony as the authority for the record.—R. H. LAWRENCE, *Monrovia, Cal.*

Capture of the Golden Eagle at Covington, Virginia.—It gives me pleasure to record the capture of a fine male specimen of the Golden Eagle (*Aquila chrysaëtos*) at Covington, Alleghany County, Virginia, on Oct. 28, 1893. It was shot by Derry B. Smith, Esq., who kindly sent me the specimen for mounting. On skinning I found it very fat. It measured as follows: Length, 33 inches; extent, 78 inches; wing, 24 inches; tail, 14 inches. This is the first specimen, to my knowledge, that has ever been taken in this immediate vicinity.—THADDEUS SURBER, *White Sulphur Springs, W. Va.*

Another Record of the Breeding of the Saw-whet Owl (*Nyctale acadica*) in Eastern Massachusetts.—As there are still but few records of the breeding of the Saw-whet Owl in eastern Massachusetts, I take pleasure in adding one more.

On July 3, 1893, Mr. Gerrit S. Miller, Jr., and I were setting a line of traps in a heavy white pine swamp that lies along Red Brook in the town of Wareham, Mass. We noticed a large old pine stump which was broken off at about 25 feet above the ground and full of Woodpeckers' holes, and pounded on it. We had pounded but once or twice when a Saw-whet Owl popped her head out of the uppermost hole and kept it there motionless, although I fired at her three times with my pistol. The third shot killed her and she fell back into the hole.

On taking the bird out, I found there was a nest containing seven eggs. The nest was quite bulky and composed of gray moss (*Usnea*) interwoven with small pieces of fibrous bark, a few pine needles, small twigs, and feathers of the bird herself. The hole in which the nest was found was 18 feet from the ground and about 8 inches deep.

In the nest besides the eggs was a half eaten red-backed mouse (*Eotomys gapperi*).

Three of the eggs were in various stages of incubation, one being on the point of hatching,—in fact the young bird had already cracked the shell. Three were addled, and one was perfectly fresh.

On dissecting the old bird we found that she had laid her full set of eggs. Her stomach contained the other half of the *Eotomys*, which she was apparently eating when we disturbed her.

I believe the only other records for Massachusetts are:—

‘Probable breeding of the Acadian Owl (*Nyctale acadica*) in Massachusetts.’ R. Deane, Bull. Nutt. Orn. Club, Vol. II, July, 1877, p. 84. Three specimens in first plumage are recorded,—one, taken June 28, 1876, at Newton, Mass., one at Hingham, Mass., July 5, 1876, and one July 8, 1876.

‘Breeding of the Acadian Owl in Eastern Massachusetts.’ N. A. Francis Bull. Nutt. Orn. Club, Vol. VI, July, 1881, p. 185. Nest with five young found June 4, 1880, at Braintree, Mass.

‘Breeding of the Acadian Owl (*Nyctale acadica*) in Massachusetts.’ Bull. Nutt. Orn. Club, Vol. VI, July, 1881, pp. 143–145. Account by William Brewster of nest with four eggs taken at ‘Tyngsboro’, Mass., April 5, 1881, by W. B. Perham. *Ibid.*, Jan., 1882, pp. 23–25. Additional notes on nesting at Tyngsboro’, by W. B. Perham, who found seven nests in all.

‘Ornithologist and Oologist,’ Vol. XIV, Oct., 1889, pp. 155–156. Record of nest with four eggs, well advanced in incubation, taken at Dunstable, Mass., May 1, 1889, by C. W. Swallow.

In connection with this see also account of four nests found at Holland Patent, N. Y., by Egbert Bagg, in ‘Ornithologist and Oologist,’ Vol. XII, No. 4, April, 1887, p. 57.—OUTRAM BANGS, Wareham, Mass.

Capture of Another Flammulated Owl in California. — On May 26, 1893, I became the possessor of an Owl which after a careful examination Mr. F. Stephens decides is *Megascops flammeola*. As this is only the *fourth* specimen known to have been taken in this State, I thought it might be of some interest to the readers of ‘The Auk’ to know of it. This specimen was taken in the San Bernardino range of mountains at an elevation of 5000 feet. The specimen was a male and measured as follows: Length, 7.50 inches; alar extent, 17.50.—E. D. PALMER, San Bernardino, Cal.

Empidonax flaviventris on Long Island, N. Y. — While collecting at Flatbush, in the suburbs of Brooklyn, on June 4, 1892, I secured a male Yellow-bellied Flycatcher, which I find is the first record for Long Island. No others were observed, although I hunted carefully through the patch of underbrush and dead saplings where the specimen was secured.—CURTIS CLAY YOUNG, Brooklyn, N. Y.

Corrections. — **Xanthocephalus xanthocephalus and Spiza americana in Maine.** — In a note in ‘The Auk,’ Vol. X, July, 1893, p. 302, I mentioned these birds in terms that require further notice. The specimen of *X. xanthocephalus* brought under consideration was first noted by Mr. Ridgway in 1887 (*cf. Auk*, Vol. IV, July 1887, p. 256). But in the dates given in the two notices there is a discrepancy of nearly a year. As I saw the bird before and at the time it was shot, and kept record of the fact in my diary, I feel authorized to furnish the correct date, which is, as I have previously stated, Aug. 17, 1882. That both notes refer to the

same specimen I am thoroughly satisfied, having lately seen Mr. Rackliff and learned that this is the same bird which he sent to Mr. Ridgway, and that he has never shot any other specimen in Maine nor elsewhere. It is evident that the source of erroneous date is not with Mr. Ridgway.

Spiza americana. — The Westbrook specimen and record is preceded by Mr. Charles W. Townsend's Job's Island specimen, recorded in 'The Auk,' Vol. II, Jan., 1885, p. 106. — ARTHUR H. NORTON, *Westbrook, Me.*

The Plumbeous Vireo in Central New York. — On September 24, 1893, I shot an adult female *Vireo solitarius plumbeus* at Peterboro, Madison Co., N. Y. The bird was feeding, just at sunset, among some old apple trees together with Robins, Chipping Sparrows, a few Warblers, and a Downy Woodpecker or two. Its motions seemed excessively deliberate even for a Vireo, though on dissection it proved to be in excellent condition, fully adult and moderately fat. In plumage the specimen is perfectly typical, agreeing in every way with Rocky Mountain examples with which I have compared it. On the other hand, it is much smaller than any of the western birds that I have seen, measuring: wing, 2.93; tail, 2.27; tarsus, 0.70; bill from nostril, 0.28 inch, thus well within the average of true *Vireo solitarius*. The form of the bill also agrees with that of the eastern bird, being much more slender than in the average *plumbeus*, though it is approached by some individuals of the latter race.

I am not now prepared to discuss the significance of these peculiarities, and the bird may for the present stand as above.

So far as I am aware this is the first record of the occurrence of the Plumbeous Vireo beyond the limits of its usual range.—GERRIT S. MILLER, JR., *Cambridge, Mass.*

Dendroica striata in Summer at Washington, D. C. — July 30, 1893, I shot an adult male Black-poll Warbler. The earliest record for the fall migration that I am aware of is Sept. 1, 1889.—EDWARD J. BROWN, *Washington, D. C.*

Helminthophila leucobronchialis. — On July 1, 1893, I found an adult *H. leucobronchialis* with two young in a small tract of alder swamp and woodland of North Haven, Conn. They were little disturbed at my presence, and I watched them carefully for some time. The adult fed both young at short intervals, leaving little doubt of its relationship to them. On July 4, they were still in the same locality, and I collected all three. Possibly the remainder of the family had been killed, as a careful search on both days through the adjacent country failed to disclose any other member of the genus *Helminthophila*.

Decomposition was so far advanced before I could prepare the adult that I was unable to determine its sex. The fact that it never sang while I was watching it, together with the generally dull color of its plumage, lead me to think it a female.

Unfortunately both of the young were still principally in the olive, downy plumage of nestlings, but enough of the final feathering had appeared on the throat, breast, and upper parts to make it certain that one, and probable that the other, would have become a typical specimen of *H. pinus*. The wing-bars of the young differ, being in the most mature specimen narrow and almost white, and in the other broader and light yellow. The plumage of the young would seem to indicate that the missing parent was an *H. pinus*.

These specimens, I think, tend to confirm the theory of Mr. Ridgway that *H. leucobronchialis* is not a valid species, but merely a leucochroic phase of *H. pinus*. — LOUIS B. BISHOP, M. D., New Haven, Conn.

Sprague's Pipit (*Anthus spragueii*) on the Coast of South Carolina.—The capture of this far western species was the good fortune of the writer on the morning of November 24, 1893. I had taken advantage of the spring-tide to secure some Scott's Sparrows (*Ammodramus maritimus peninsulae*), and upon going over a cyclone-swept cotton field *en route* to the marshes, I noticed a bird that resembled the Titlark (*Anthus pensylvanicus*), but observed that it did not wag its tail. I knew at once what it was—a western prize, and I at once shot it. The bird is an adult male in very fine unworn plumage, and was very fat. The exact locality was nine miles from Mount Pleasant, and two miles from the ocean. As far as I am aware this is the first eastern record for this species.—ARTHUR T. WAYNE, Mount Pleasant, South Carolina.

Remarks on the Nest of *Cistothorus palustris*.—The nest of the Long-billed Marsh Wren is too well known to ornithologists generally to need description, but the only explanation of its globular form, which I can find, is that given by Wilson, who states: "A small hole is left two-thirds up, for entrance, the upper edge of which projects like a pent-house over the lower, to prevent the admission of rain." The inference from this and similar statements of later writers would be that the roof is built to protect the eggs from the rain. This may be partially true, but it seems strange that a species nesting at a season when violent rain-storms are least frequent should need a protection, which birds breeding earlier in the spring do not require.

But there is another danger to which the eggs of *C. palustris* are peculiarly liable, both from the character of the country in which they breed and the slenderness of the reeds which support the nest. This is the wind, which, sweeping across the exposed marshes of this Wren's summer home, often levels the rushes with the ground. I have found the reeds growing in the Quinnipiac Marshes near New Haven, Conn., where large numbers of this species breed, leveled in this manner, and the attached nests turned almost at right angles to their original position. It is evident that under such conditions the eggs in an uncovered nest would fall out and be destroyed, while in many of these nests, which had the

long axis almost horizontal, I found the eggs reposing in perfect safety. The upward trend of the entrance, forming the "pent-house" of Wilson, naturally decreases the liability of the eggs to fall out, even if the wind should force the side of entrance toward the earth. It therefore appears to me at least probable that the main object of this Wren in constructing its elaborate dwelling is protection from the wind rather than the rain.

It has also been my experience that the top of the nest is generally more firmly fastened to the reeds than the bottom, and in two instances I noticed among the partially leveled reeds nests whose bases swung free of all support, thus retaining their original perpendicular position. However, this may have been the result of accident rather than design.

The taking of three sets of white eggs, presumably of this species, may be of interest. They consist of four, five, and four eggs, and were taken on June 24, July 11, and July 28, 1893, near the edge of a small salt-water ditch in the Quinnipiack Marshes, Hamden, Conn. The nests, which are fairly typical of *C. palustris*, were not more than eight yards apart, and probably belonged to the same bird. The eggs are white, translucent when taken, irregular in shape, and several have small, roughened projections on the shell. One from the set of five has a few dark spots half concealed beneath the surface of the shell and most perceptible in holding the egg to the light.

C. palustris is the only Wren known to inhabit this marsh, and a male, which I believed to be the owner of the first set, together with a Wren which settled for an instant at the entrance of the third nest, were of this species. The character of the locality, and the large numbers of the Long-billed Marsh Wrens everywhere around, made more certain identification impossible.

The white eggs of this species which have been recorded, taken in connection with the normally white eggs of its near ally, *C. stellaris*, and the frequently white eggs of the Bluebird (*Sialia sialis*) have to my mind a peculiar importance as an additional argument for the truth of the theory of protective coloration, the covering of the nest rendering the usual dark pigment unnecessary.—LOUIS B. BISHOP, M. D., *New Haven, Conn.*

[Albinistic eggs are well-known to occur more or less frequently in birds that normally lay colored or spotted eggs, and which do not breed in holes or in covered nests; just as albinism may occur in the bird itself in any species. Why, then, should abnormally pale eggs be considered as having any special significance in the two species above cited?—J. A. A.]

Distribution of the Hudsonian Chickadee.—In his paper on 'The Hudsonian Chickadee and its Allies,' published in 'The Auk' of Oct. 1893, Mr. Rhoads makes the statement (p. 322) that "this Chickadee is a rare visitor in Manitoba, Ontario and Quebec, and for that matter, in any non-mountainous locality south of Hudson's Bay." This is entirely con-

trary to my experience. In that part of Nova Scotia that I am particularly familiar with, Annapolis, Yarmouth and Digby Counties, this bird is extremely abundant. Every autumn for the past eight years I have spent a month or more with Digby as my headquarters.

Here the Hudsonian Chickadee is rather hard to shoot owing to the nature of the country it inhabits, keeping almost exclusively in the thick second growth spruce and fir woods, but in a day's walk through their favorite haunts I never fail to see less than twenty-five or fifty and often many times that number. In October and November they are in large loose flocks in company with the Common Chickadee and the Golden-crowned Kinglet, and often the spruce woods seem fairly alive with these birds, always in motion, always passing on and on through the spruces, so fast that it is impossible to keep up to them. Often while walking through these dense forests of evergreens, suddenly as if by magic, the trees about one will become alive with these three species, their cheerful notes sounding from every branch and the next moment, as suddenly as they came, they will disappear again and leave the forest still and gloomy as before.

The country about Digby is strictly non-mountainous, and what hills there are, as the North Mountain back of the town of Digby, and the hills back of Granville on the opposite side of the Annapolis Basin, are covered with a hard wood growth, for the most part, principally beach. I never found the Hudsonian Chickadee in these woods. In fact I have never seen them except very occasionally anywhere but in the thick spruces and firs.

My own experience is, as I have stated above, confined to the autumn months, but my friend, Mr. H. A. P. Smith of Digby, N. S., who is a careful observer, tells me the bird is strictly resident and breeds abundantly.

In August and September, 1880, my brother, E. A. Bangs, was camped on the Restigouche River, N. B., and found the Hudsonian Chickadee very abundant all along the river. He got a good series of them without any difficulty.

So far from its being a rare visitor in any non-mountainous locality south of Hudson's Bay, I should be much surprised not to find the Hudsonian Chickadee abundant in any part of Canada, New Brunswick or Northern Maine, where the country was suitable to its mode of life.—
OUTRAM BANGS, Boston, Mass.

Notes on Some Long Island Birds.—*Empidonax flaviventris*.—Mr. E. F. Carson, of Brooklyn, has kindly permitted me to record two specimens of this Flycatcher, which he has secured in the vicinity of Brooklyn, N. Y. The first one was killed in a tree on Madison Street, in the heart of the city, on June 10, 1893; the second was shot in the woods at Parkville, Kings County, on August 19, 1893. They were both males, and the only ones we have met with on Long Island.

***Empidonax acadicus*.**—On June 10, 1893, I shot a male of this species in tall woods covering a hillside in Woodhaven, Queens County. The bird

was feeding, and uttering a harsh, gutteral note. At about the same date the previous year, and in the same woods, I heard the note of a Flycatcher which I supposed to be also of this species. Both of these appeared to be living in the immediate neighborhood, so I judge that they were breeding, although a brief search failed to reveal either nest or mate.

The two birds mentioned above are the only ones of the species I have ever seen on Long Island, but through the courtesy of Mr. William Dutcher, I am enabled to present the following additional information.

In 1879, Hon. Theodore Roosevelt published a brief paper entitled 'Notes on Some of the Birds of Oyster Bay, Long Island,' in which he says of the species, "rather common summer resident; much less so than the *minimus*. Frequentes the dry, rather dense woods, keeping in the underbrush and among the lower branches of the trees. In autumn, I have found the curiously-banded young, associating with various warblers; otherwise they are solitary birds. Is more restless than the *trailli*. It has a querulous note, sounding like 'queech,' or 'qu-eech,' which it utters repeatedly and rapidly."

In 1888, Mr. Alfred Marshall found the bird breeding. Following is a copy of a letter written by him to Mr. Dutcher. He says, "I enclose letter of Capt. Bendire, identifying the eggs and nest as Acadian Flycatcher. They were found June 17, 1888, at Northport, L. I. The nest was placed in a dogwood tree, about ten or twelve feet from the ground. It was in quite deep woods and about one hundred yards from a grass field. The nest is composed of bark of cedar, and is lined with weeds. The bird was very shy, and it was about an hour before I saw her at all."

From the records I have given, it will be seen that the Acadian Flycatcher is apparently confined on Long Island, to the heavily wooded districts of the north shore, where it is a regular and perhaps not uncommon resident.

Helminthophila chrysoptera.—Mr. J. P. Giraud, Jr., in his 'Birds of Long Island,' published in 1844, says of this bird: "On Long Island this species occurs only in small numbers, and according to my observations, is not an annual visitor." Since the publication of Mr. Giraud's work, I know of no published records of this species. I have myself secured but one specimen. This was a fine male which I killed at Parkville, Kings Co., on May 11, 1893; it was shot from a low limb in the tall woods, where it had apparently just alighted from a more or less extended flight.

There is a single specimen in the Lawrence collection, a male, collected by J. F. Ward, Aug. 15, 1831.

Mr. Roosevelt, in the paper previously referred to, says that he has "shot it but once, May 10, 1878."

Mr. Dutcher has one specimen in his collection, which was presented to him by Mr. John D. Hicks. It is a male, and was killed at Old Westbury, Queens Co., in the spring of 1880.

Helminthophila peregrina.—In 'The Auk' for April, 1889 (page 138), Mr. William Dutcher has given the only records of this bird from Long

Island; he mentions, in addition to the single specimen in the Lawrence collection, four specimens in his own collection, all received from the light-houses in the month of September.

I shot my first and only specimen in a low second growth tract of oaks at Lake Grove, Suffolk County, on Sept. 20, 1893. It is a young male.

Sylvania mitrata.—Since my previous record of this bird (Auk, Vol. IX, p. 306), I have secured another specimen, an immature female, in almost the identical spot in Parkville where I shot the first one, which was an adult male. The first specimen was killed April 30, 1892, as it alighted on the track of a railway which passes through the woods; the second one was shot May 15, 1893, as it was feeding in the lower limbs of the trees.

Mr. Dutcher has two specimens in his collection, one of which he has recorded (Auk, Vol. VI, p. 139); the other was killed at Shelter Island, May 16, 1891.

Mr. J. C. Knoess, the taxidermist of Riverhead, has one very fine specimen in his collection.

These, with two specimens in the collection of the Long Island Historical Society (Auk, Vol. X, p. 277) and two in the Lawrence collection, make in all nine recorded specimens from Long Island.—ARTHUR H. HOWELL, Brooklyn, N. Y.

Stray Notes from Massachusetts.—*Branta canadensis*.—Ponkapog Pond, Mass., Oct. 20, 1893. First Canada Geese seen in this locality this season; six birds. The next noted were twenty, on the 25th. These last were very tired.

Larus argentatus smithsonianus.—Oct. 22. A large movement of American Herring Gulls towards the southwest; weather fine and warm. White and gray plumaged birds were noted passing high up over the pond; one flock of twenty-two were flying in form of a harrow. The flocks varied from three or four birds to forty each. Between three and four hundred were estimated to have passed.

Charionetta albeola.—Oct. 30. The first Buffle-heads this season were noted here to-day; no others have been seen, which is very unusual. Three birds noted up to Dec. 1st.

Fulica americana.—Sept. 19. The first American Coots, eighteen, seen to-day; six were shot. It is an unusually early date for them here.

Dafila acuta.—Sept. 21. An immature bird shot to-day.

Pandion haliaetus carolinensis.—Sept. 22. Eight Fish-hawks passed over the pond to-day.

Spatula clypeata.—Sept. 25. One immature Shoveller Duck shot to-day.

Philohela minor.—Oakham, Mass., Oct. 15, 1893. Mr. J. F. Brown of Chelsea, Mass., informs me that in company with Mr. John Stone of Oakham he visited daily the Woodcock grounds in the vicinity of Oakham for fifteen consecutive days, commencing on the above date, but

failed to find only a very few birds, although the grounds were extensive. Mr. Stone has shot over this ground for twenty-five years and this is the only year in his experience that no defined flight of Woodcock has been noted by him. From what I have learned I am of the belief that the flight in Massachusetts passed during the last few days in September and first few days in October.

Sterna tschegrava.—Cape Cod, Mass., Sept. 20, 1893. Two Caspian Terns recently came into my possession which were taken on or about the above date. Both birds proved to be females on dissection, one being an adult, the other immature.—GEORGE H. MACKAY, Nantucket, Mass.

Effect of the Great Cyclone of August 26-27 upon Certain Species of Birds.—The cyclone which devastated the coast of South Carolina was the most destructive which has ever been recorded. About 3 o'clock p. m., a Frigate Bird (*Fregata aquila*) was seen, and shot at twice but unfortunately was not secured. A few days after the cyclone I made a trip to Long Island, S. C., which lies east of Sullivan's Island, and saw and examined countless numbers of *Puffinus major* dead upon the beach. Only a single example of *Puffinus auduboni* was observed, while a great many *Pelecanus fuscus* were found strewn along the beach for miles. Royal Terns (*Sterna maxima*) were shot at Barnwell C. H., which is about eighty-five miles from the sea.—ARTHUR T. WAYNE, Mount Pleasant, South Carolina.

CORRESPONDENCE.

[*Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.*]

Popular vs. Scientific Ornithology.

EDITORS OF 'THE AUK':—

Dear Sirs,—Mr. Brewster's gentle admonition in 'The Auk' of October last (Vol. X, p. 365) seems to call for an explanation of my position. The reasons I turn more readily to a literary than to a scientific channel of expression are several, not to speak of the fact that I am naturally of literary rather than scientific proclivities. There is, first, my great desire to bring into the lives of others the delights to be found in the study of Nature, which necessitates the using of an unscientific publication, and a title that shall attract, even though it may, in a measure, "ambush" my subject.

Again, never having studied scientific ornithology, and having no time at present if I had the wish to do so, and, moreover, having an intense love of live birds, and an almost Buddhistic horror of having them killed, I must admit to feeling the least bit out of my element among those who—to put it mildly—feel otherwise. Let those who will spend their days killing, dissecting and classifying; I choose rather to give my time to the study of life, and to doing my small best toward preserving the tribes of the air from the utter extinction with which they are threatened.

And lastly, a confession: I should take pleasure in "sharing my discoveries" were I so happy as to make any; but to me everything is a discovery; each bird, on first sight, is a new creation; his manners and habits are a revelation, as fresh and as interesting to me as though they had never been observed before. How am I to tell what is an old story and what a new one? What to announce in a scientific journal, and what to proclaim with delight to my fellow ignoramuses?

I could study; I could learn? Doubtless; but that would take the enthusiasm out of my work. Could I enjoy and sympathize with the raptures of a little pair in feathers, if my mind was filled with doubts and queries as to their proper niche in the world of classification?—if I concerned myself about the number of their tail feathers, the exact shade of their plumage, or whether they were a species or a subspecies, and entitled to two or three Latin names?

No—forever no! Study these things who will. I study the beautiful, the living, the individual bird, and to my scientific confreres I leave his skin, his bones, and his place in the Temple of Fame.

OLIVE THORNE MILLER.

Brooklyn, N. Y., Nov. 7, 1893.

NOTES AND NEWS.

CHARLES SLOVER ALLEN, M. D., an Associate Member of the American Ornithologists' Union, died in New York City on October 15, 1893, after a brief illness. Dr. Allen was born at New Bern, North Carolina, in 1855. After graduating with honors from Columbia College, New York City, he studied medicine under Dr. James B. Wood and obtained his degree of Doctor of Medicine from Bellevue Hospital. As the result of a competitive examination, in which he took the highest rank, he was appointed interne in the Charity Hospital on Blackewell's Island. At the completion of his term of service in this institution, he went abroad and continued his studies at Heidelberg.

On returning to New York City he was associated with Dr. James B. Wood and later established an office of his own at 21 East 28th Street, which he occupied at the time of his death. In the treatment of throat, nose, and ear affections Dr. Allen was notably skilful and he held the position of clinical lecturer on the diseases of these organs in the Medical Department of the University of the City of New York.

Dr. Allen was born a naturalist and only the duties of an unusually busy professional life prevented him from taking high rank as an original investigator in some branch of natural history. As a naturalist his tastes were of the broadest. Every object in nature had for him a fascination which impelled him to study the animate or inanimate with equal ardor.

His more recent natural history work had been largely confined to investigations of the toxic power of snake venom with the particular object of discovering an antidote for this virile poison, but he never lost interest in his study of birds and their habits, and to the readers of 'The Auk' he will best be known by his admirable articles on the Fish Hawk and Black Duck (*Auk*, IX, pp. 313-321, and X, pp. 53-59). His notebooks were filled with equally interesting material which it is to be regretted will now never see the light.

Dr. Allen was a rarely genial comrade. In the field no misfortune was great enough to dampen his enthusiasm, and his generous disposition always prompted him to sacrifice himself for the good of his companions. Indeed his presence on an expedition was an assurance that it would be both a pleasant and successful one.

THE A. O. U. Committee on Bird Protection made, through its Chairman, Mr. George B. Sennett, its usual report at the Eleventh Congress and asked to be discharged, the need for such a Committee being considered no longer urgent, of late its function having been mainly advisory and its services not often required. As most of the States have now enacted excellent statutes for the protection of birds, modelled to a large extent upon suggestions advanced by the Committee, little more than their proper enforcement is now necessary. In recognition of its important services to the cause it was designed to aid, during a continuous service of ten years, the Union acceded to its request, accompanying its discharge with a vote of thanks. Later, in view of certain contingencies it was thought might arise, however, it was deemed desirable to have the Union represented officially by a committee that could act in its behalf, and a new 'Committee on Protection of North American Birds' was appointed, as follows: Frank M. Chapman (Chairman), Charles E. Bendire, Montague Chamberlain, Jonathan Dwight, Jr., and L. S. Foster.

AT THE Eleventh Congress of the A. O. U. the Union authorized the preparation of a new 'Check-List of North American Birds,' the original edition having been for several years out of print. The purpose of the

new edition is to duly incorporate with the original edition the numerous additions and nomenclatural modifications contained in the six 'Supplements' that have appeared since the publication of the original edition, and to revise and give more in detail the 'habitats' of the species and subspecies, rendered possible through our greatly increased knowledge of the geographical distribution of our birds during the ten years that will have elapsed between the publication of the two editions. For this purpose it was thought desirable to place the work as nearly as possible in the hands of the original 'Committee on the Classification and Nomenclature of North American Birds,' which was accordingly reappointed, with a single substitution, as follows: Elliott Coues (Chairman), J. A. Allen, William Brewster, C. Hart Merriam, and Robert Ridgway; Dr. Merriam thus taking the place of Mr. Henshaw, in view of the probable inability of the latter to serve, owing to prolonged absence in the West. It is not expected that the new edition will be ready for the press till early in 1895.

OWING to the pressure of other engagements, Mr. Charles F. Batchelder declined reappointment as Associate Editor of 'The Auk,' and the place was filled by the selection of Mr. Frank M. Chapman. Mr. Batchelder had filled the position so efficiently for a period of six years that his declination was accepted with sincere regret, not only by the Editor-in-Chief, but by all the members of the Council, with whom rests the selection of the Editorial Staff, his attention to all the details of publication having been unremitting and most satisfactory.

WE HAVE received a prospectus of 'A Monograph of the Coraciidae, or Family of the Rollers.' The work will be published by the author, Mr. Henry E. Dresser, author of 'The Birds of Europe,' 'A Monograph of the Meropidae,' etc., in an edition limited to 250 copies. The size will be imperial quarto, and the work will give "as complete an account as possible of all the known species of these richly colored birds." The plates have been drawn by Mr. J. G. Keulemans, and will be hand-colored. Intending subscribers may address the author, Topcliffe Grange, Farnborough, Kent, England.

THE NEW YORK ACADEMY OF SCIENCES has recently published in its 'Transactions' the report of the Audubon Monument Committee, appointed in October, 1887, to secure funds for the erection of a monument over the grave of the distinguished ornithologist John James Audubon. The report (Trans. N. Y. Acad. Sci., Vol. XIII, pp. 23-65, Nov. 1893) contains, besides an account of the proceedings of the Committee (pp. 23-30), and as accompanying documents, the addresses in full made at the unveiling of the Monument, April 26, 1893. These were by Prof. Thomas Egleston, Chairman of the Committee, in behalf of the Academy presenting the monument to the Corporation of Trinity Church (pp. 30-36), and the reply of the Rev. Morgan Dix, D. D., accepting the monu-

ment in behalf of Trinity Church (pp. 37, 38); also the proceedings of the special meeting of the Academy held at the American Museum of Natural History on the evening of the same day. These include a brief address by President Morris K. Jesup of the Museum; the reading of some extracts from unpublished letters of Audubon by President H. Carington Bolton of the Academy; a short address by Prof. Egleston, and a memorial address on 'The Life and Services of John James Audubon' by Mr. Daniel G. Elliot (pp. 43-57),—a well-delivered and very just tribute to the memory of the great painter-naturalist. Following the address is a list of the contributors to the monument fund, several hundred in number. The proceedings will be separately issued for distribution to the contributors to the fund.

'THE NIDIOLIST,' an illustrated monthly magazine devoted to ornithology, is published and edited by Mr. Henry Reed Taylor, at Alameda, Cal. It is one of the youngest of the numerous aspirants to fame in the field of ornithology, the fourth number bearing the date of December, 1893. The matter and the photo-engravings with which it is liberally illustrated are of good quality, and, trusting it will maintain its present high standard as a popular magazine of ornithology, we give it a hearty welcome and wish it the success it thus far so well deserves. Among its contributors we notice the names of a number of well-known ornithologists.

THE COOPER ORNITHOLOGICAL CLUB was organized at San José, Cal., June 22, 1893, which "all honest ornithologists in California are invited to join." A report of the regular monthly meeting held Nov. 4 last, by the Secretary, Mr. C. Barlow, of Santa Clara, Cal., occupies nearly two pages of the December number of 'The Nidiologist,' from which it appears that several papers of much interest were presented, and quite a list of papers is announced for the meeting of December 2. Such an organization cannot fail of affording great benefit to its members and of promoting the study of Californian ornithology.

THE CONGRESS ON ORNITHOLOGY, held in Chicago, under the auspices of the World's Congress Auxiliary, Oct. 18-21, 1893 (see *Auk*, X, pp. 386, 387), proved a very gratifying success, considering the short time allowed for its organization and development, the interest shown and the size of the audiences in attendance more than exceeding the expectation of the promoters of the enterprise. The program contained a list of some thirty papers, the general character of which is shown by the following titles of some of the papers presented. Opening address by the Chairman, Dr. Elliott Coues; The Migration of Birds, J. A. Allen; The Ornithology of Columbus's First Voyage, Frank M. Chapman; On the Destruction of Birds, Dr. D. Webster Prentiss; The Red-shouldered Hawk in Captivity, Harry C. Oberholser; The Effect of the Introduction of the Mongoose on

the Fauna of Jamaica, W. L., W. E. D. Scott; Birds of British Guiana, J. J. Quelch; Ornithology in Our Schools, Abraham H. Bates; Kinship of Birds as shown by their Eggs, J. N. Baskett; Bird Observations, or When, Where and How to see Our Birds, O. B. Warren; Instinct in Birds, J. H. Bowles; Changes of Habits in Certain Species of Maine Birds, Manly Hardy; Slaughter of the Innocents, Leander S. Keyser; Some Recent Economic and Scientific Questions in Ornithology, Dr. R. W. Shufeldt; The Range of the Crossbills (*Loxia*) in the Ohio Valley, Amos W. Butler; To the Rescue of the Birds, Hortensia M. Black; Some Notes on the Herons of Central Florida, T. Gilbert Pierson; Popular Names of Birds, William E. Praeger. The success of the Congress was largely due to the efforts of Dr. Coues and Prof. S. A. Forbes, and especially to the efficient and untiring assiduity of the acting Secretary, Mrs. E. Irene Rood of Chicago. The papers, as may be inferred from their titles, were properly of a popular character and well adapted to stimulate interest in ornithology and in the better protection of bird life.

MR. FRANK M. CHAPMAN, of the American Museum of Natural History, New York City, will return to the Island of Trinidad about the end of January to resume his study of the Fauna of the Island, especially its mammal and bird life. The results of his last year's work on the mammals have been published (Bull. Am. Mus. Nat. Hist., V, pp. 203-224), and a very extended report on the birds is ready for the press, and will probably be issued in February of the present year.

AMONG the courses of popular lectures given free to the public at the American Museum of Natural History in New York City is a course on 'Birds of the Vicinity of New York City,' by Mr. Frank M. Chapman, Assistant Curator in the Department of Ornithology. The lectures of this course will be given on Saturday afternoons in January, 1894, and will be followed by other courses in February, March, and April by other Curators or their assistants, on Mineralogy, Mammalian Palaeontology, and Entomology, in each case the lectures being illustrated by specimens from the collections to which they relate. The experiment of giving popular lectures to people earnestly in search of natural history information was first tried last year, and the success attending last year's courses shows that the efforts of the Museum authorities to popularize natural history are well appreciated. The ornithological course will comprise four lectures, as follows: I, Why we Study Birds, How to Study Birds, Our Winter Birds. II, The Birds of March, April and May, and the Spring Migration. III, The Birds of Summer, Birds' Nests, Birds' Songs. IV, The Birds of Fall and the Fall Migration, Birds in their Winter Homes.